Montana Department of
ENVIRONMENTAL QUALITY

Judy Martz, Governor

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.state.mt.us

MAILED
6-23-03 JH

June 20, 2003

Bill Michalson
Solid Waste Superintendent
316 N. Park Ave.
Helena, MT 59623

RE: Final closure of the City of Helena Class II Landfill (License #90)

Dear Mr. Michalson:

In his April 28, 2000, letter, Rick Thompson stated that to officially close the City of Helena Class II Landfill the original license must be surrendered or if it couldn't be located the Department would need a letter stating this. Your February 26, 2002, letter stated that you could not locate the original license. This fulfills the requirement for final closure of the landfill effective January 27, 2000.

The potential liability due to adverse environmental impacts remains and is not absolved because the landfill is closed. Post closure care as well as corrective action must continue at the facility until the Department gives written approval to discontinue.

If you have any questions or need additional information, please contact me at the Permitting and Compliance Division, Community Services Bureau, Solid Waste Section, (406) 444-9879 or e-mail mdasilva@state.mt.us.

Sincerely,

Mike DaSilva
Licensing Program

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GUARDIAN OF THE GULCH

City of Helena

CITY OF HELENA

Public Works – Solid Waste
316 North Park Avenue
Helena, MT 59623
Telephone: 406/447-1566

Montana State DEQ
Attn: Mr. DaSilva
P.O. Box 200901
Helena, MT 59620-0901

June 3, 2003

Re: City of Helena Class II Landfill (License #90)

Dear Mr. DaSilva,

In January of 2000, our records indicate that we had met all requirements to close our landfill and were to surrender our current license (letter from Rick Thompson attached).

I became the Solid Waste Superintendent in June of 2001. During this time, the City was reorganizing and filling staff positions as well as relocating personnel and staff along with records and files. In February of 2002, (see attached letter), I requested that you review your file to verify whether the license had been surrendered. We never received a response to my inquiry. In October of 2002, we again reviewed our files and found the original license and sent it to your office (see attached letter). In May of 2003, I spoke to Rick Thompson (you were out ill) requesting a letter verifying the effective closure date of 1/27/2000. This letter would be greatly appreciated by our Administrative Services office for budgeting purposes. I do realize we have to continue with the monitoring process for a 30-year period and continue to maintain the site. This letter with an official date will allow our budget personnel to project long term costs associated with this landfill.

If you have any questions regarding this letter, feel free to call me at 447-1566.

Sincerely,

Bill Michalson

Bill Michalson
Solid Waste Superintendent

Cc: Tim Burton, City Manager
John Rundquist, Public Works Director
Pat Crowley, DEQ
Rick Thompson, DEQ

Enclosures
BM:kc

GUARDIAN OF THE GULCH

City of Helena

CITY OF HELENA

Public Works - Solid Waste
316 North Park Avenue
Helena, MT 59623
Telephone: 406/447-1566

February 26, 2002

Mr. Mike Dasilva
Montana DEQ
P.O. Box 200901
Helena, MT 59620-0901

Dear Mr. Dasilva,

In researching our files, we were able to locate the attached letter from Mr. Rick Thompson regarding the closure of our landfill. Apparently, the landfill is closed, however, I have not found the original license. This may have already been surrendered. Could you please review our file and determine whether or not this has been completed?

If you have any questions, feel free to call me at (406) 447-1566.

Sincerely,

Bill Michelson

Bill Michelson
Solid Waste Supervisor

BM:kc

Enclosure (1)

File - FYI

Montana Department of
ENVIRONMENTAL QUALITY
P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • E-mail: www.deq.state.mt.us
Marc Racicot, Governor

RECEIVED
MAY 01 2000
CITY ATTORNEY'S OFFICE
C: Manager
Pub. Works

April 28, 2000

Kim Sell, Paralegal
City Attorney's Office
316 North Park Avenue
Helena, MT 59623

Re: City of Helena Class II Landfill (Lic. #90) – Final Closure.

Dear Kim:

Based on the January 27, 2000, submittal of the Public Notice of Land Use, final closure status will be granted to the subject facility. All applicable fees involved with maintaining the solid waste license will be terminated. To officially close the City of Helena Class II Landfill file, the original license must be surrendered. If the original cannot be located, please send a letter stating this.

The potential liability due to adverse environmental impacts remains and is not absolved because the landfill is closed. Post-closure care and maintenance as well as corrective measures must therefore continue at the facility until ~~that~~ the Department gives written approval to discontinue.

If you have any questions or comments, please contact me in writing at the Permitting and Compliance Division, Community Services Bureau, Waste Management Section, by telephone at (406)444-5345, or by e-mail at rithompson@state.mt.us.

Sincerely,

Rick Thompson

Rick Thompson
Waste Management Section Supervisor

GUARDIAN OF THE GULCH

City of Helena

CITY OF HELENA

Public Works – Solid Waste
316 North Park Avenue
Helena, MT 59623
Telephone: 406/447-1566

October 21, 2002

Montana State DEQ
Attn: Mr. DaSilva
P.O. Box 200901
Helena, MT 59620-0901

Re: City of Helena Class II Landfill (License #90) – Final Closure

Dear Mr. DaSilva,

In February 2002, we were unable to find the original license for our Class II Landfill (License #90). I had requested that you review our files at that time to determine whether or not this had been surrendered.

We recently researched some additional files and have found the original license which I am including with this letter. I apologize for the delay in surrendering the license. We have had numerous changes in staff and relocation of our records at the time the closure was occurring.

Sincerely,

Bill Michalson
Solid Water Superintendent

BM:kc

Enclosure (1)

DEPARTMENT OF ENVIRONMENTAL QUALITY
PERMITTING AND COMPLIANCE DIVISION
SOLID WASTE MANAGEMENT PROGRAM

SOLID WASTE MANAGEMENT SYSTEM
ANNUAL RENEWAL CERTIFICATE

This certifies that

CITY OF HELENA

has been approved for renewal and is validly licensed for the period of July 1, 1997 throught June 30, 1998 by the Montana Department of Environmental Quality

as a

Class II Landfill

SYSTEM LICENSE NUMBER 90

This renewal certificate is contingent upon payment of fees for July 1, 1997 throught June 30, 1998.

The license as validated by this certificate may be revoked if the Licensee or the Owner/Operator violates any provisions of Title 75, Chapter 10, Parts 1 and 2, Montana Code Annotated, or rules adopted in accordance with that law.

Jon Dilliard
Bureau Chief

THIS CERTIFICATE IS NON-TRANSFERABLE

DEPARTMENT OF ENVIRONMENTAL QUALITY
PERMITTING AND COMPLIANCE DIVISION
SOLID WASTE MANAGEMENT PROGRAM

SOLID WASTE MANAGEMENT SYSTEM
ANNUAL RENEWAL CERTIFICATE

This certifies that

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Class II Landfill

SYSTEM LICENSE NUMBER 90

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The license as validated by this certificate may be revoked if the licensee or the Owner/Operator violates any provisions of Title 75, Chapter 10, Parts 1 and 2, Montana Code Annotated, or rules adopted in accordance with that law.

Don Dillman
Bureau Chief

THIS CERTIFICATE IS NON-TRANSFERABLE

Montana Department of
ENVIRONMENTAL QUALITY

Judy Martz, Governor

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.state.mt.us

MAILED
6-30-03 gh

County Lewis & Clark
Facility & # 90
Closure
Finan Assur
GW Corr Meas
GW Monitoring
GW Reports
Inspections
Other:
Landfarm
Liner
Methane
O & M
Run - On

June 30, 2003

Sanna Yost, P.E.
Morrison Maierle, Inc.
P.O. Box 6147
Helena, MT 59604

RE: Carroll College CE Lab Sanitary Sewer Main Extension
City of Helena Class II Landfill (Lic. #90) Crossing

Dear Ms. Yost:

The document and plans you submitted on June 17, 2003 adequately address the issues in Tim Stepp's January 7, 2003 Letter.

Please call me at 444-9879 when the contractor is ready to penetrate the landfill cap, when the contractor is ready to install the flowable fill plug and when the contractor begins to backfill the trench. Please provide a set of as-built plans.

Thank you for your cooperation. If you have any questions or need additional information, please contact me at the Permitting and Compliance Division, Community Services Bureau, Solid Waste Section, (406) 444-9879 or e-mail mdasilva@state.mt.us.

Sincerely,

Mike DaSilva
Licensing Program

MAILED

INITIALS [illegible] DATE 6/27/03

SW OUTGOING CORRESPONDENCE

NEW APPLICATION	Initial / Date
Janet H	
Rick T	

INSPECTIONS	Initial / Date
Pat C	
Janet H	
Rick T	

CLOSURES	Initial / Date
Janet H	
Rick T	

FEES	Initial / Date
Janet H	
Rick T	

COMPLAINTS	Initial / Date
Pat C	
Janet H	
Rick T	

GROUND WATER	Initial / Date
Pat C	
Janet H	
Rick T	

GEN CORRESPONDENCE	Initial / Date
Janet H	[illegible] 6/27/03
Rick T	[illegible] 6/27/03
Tim	

MISCELLANEOUS	Initial / Date

Stepp, Tim 6/18/03

From: Sanna Yost [syost@m-m.net]
Sent: Wednesday, June 18, 2003 1:09 PM
To: JODIBINGHAM@aol.com
Cc: JHardwic@carroll.edu; jscharf@carroll.edu; jrundquist@ci.helena.mt.us; martyl@daconstruction.com; Kurt Keith; ericr@performainc.com; tstepp@state.mt.us
Subject: Methane Gas Monitoring Wells in Centennial Park

Hi Jodi-

Dick Anderson Construction crews are starting up again on the utilities for the Carroll Residence Hall Project, finishing installation of the new storm water system catch basins. I'll have them fix the methane gas monitoring well per your comments, by changing the 4-inch pipe to a 1-inch PVC pipe to better match with your monitoring equipment and by grouting between the pvc pipe and steel casing to insure no short-circuiting occurs. Can you meet with me and the project foreman on site on Thursday...tomorrow...to review with him what we need them to do? Let me know what time will work for you.

Also, about 100 ft north of the storm water line, a new sewer line is going to be installed across Centennial Park, to service the new CE Lab on the Carroll campus. The design report and plans have been submitted to the City of Helena and to the DEQ for approval. Final approvals are expected within the next 2 weeks. The sewer line will be installed in July and will have the same methane gas monitoring well and flowable fill plug at the landfill cap "perforation" as the storm water line had. We will notify you prior to the construction start date so you can inspect the installation of the landfill crossing, the flowable fill plug and the methane gas monitoring well.

I'll get you a set of plans for the new sewer line, showing the methane monitoring well and plug, when we meet on-site about the monitoring well on the storm water line.

Talk to you soon,

Sanna M. Yost, P.E.
Senior Civil Engineer
Morrison Maierle, Inc.
(406) 442-3050

Stepp, Tim 5/9/03

From: Sanna Yost [syost@m-m.net]
Sent: Friday, May 09, 2003 5:54 PM
To: JODIBINGHAM@aol.com
Cc: jscharf@carroll.edu; jrundquist@ci.helena.mt.us; mike@dtarchitecture.com; Ken Salo; tstepp@state.mt.us
Subject: CE lab sanitary sewer - landfill crossing & methane gas monitoring well

To provide sanitary sewer service to the new CE lab building on the south east corner of the Carroll College campus, we are proposing to install a new 8" diameter sanitary sewer main from the campus to the City's existing sewer main on the east side of Centennial Park. The new sewer line will be about 100 feet north of the new Carroll storm water pipeline and will run parallel the new storm pipe. We are proposing to install a flowable fill plug at the edge of the landfill "cap" where the new pipeline "perforates" the cap and to install a methane gas monitoring well in the pipe trench on City property immediately east of the Carroll College property boundary. This work will need to be coordinated with the City, the DEQ and you (as the City's representative). Helena Sand and Gravel will be the contractor doing this work.

Do you want us to use a 1" or a 2" PVC pipe for the monitoring well in lieu of the 4" PVC pipe shown on the original monitoring well sketches? The project's engineering report, plans and specs will be submitted to the City of Helena for review and approval next week and will be sent to DEQ after we receive and incorporate the City's review comments. We will be working with Tim Stepp at the DEQ to receive approval to cross the landfill.

Thanks for your assistance in coordinating the methane gas features of this project. I'll keep you posted on project status and construction time frame.

Sanna M. Yost, P.E.
Senior Civil Engineer
Morrison Maierle, Inc.
(406) 442-3050

Stepp, Tim 4/23/03

From: Sanna Yost [syost@m-m.net]
Sent: Wednesday, April 23, 2003 4:45 PM
To: tstepp@state.mt.us
Cc: JODIBINGHAM@aol.com; jscharf@carroll.edu; jrundquist@ci.helena.mt.us; mike@dtarchitecture.com; Ken Salo
Subject: DEQ Issues related to Pipelines crossing the old Phase I landfill unit east of Carroll College

Storm Drainage System Improvements
The installation of the storm sewer beneath the cover of the old Phase I landfill unit on the south end of the City of Helena Class II facility had been completed per DEQ approved plans and specifications. The project is presently in winter shut-down status. Upon spring start-up, remaining minor modifications will be made to the methane monitoring well. As-built Drawings of applicable portions of the project will be submitted to you upon completion of construction of all remaining system components.

**********On a separate issue**********

Proposed Sanitary Sewer System Improvements
On a separate issue for the new Carroll College Engineering and Science Lab, the approved sewer service route for the new building has turned out to be crushed and is in a location where replacement is impossible (under the KTVH Satellite Farm, surrounded by fiberoptics). To service the east side of the Carroll College campus, the campus is proposing to construct an 8-inch diameter sanitary sewer main across the old Phase I landfill unit approximately 100 ft north of the newly installed storm drain. In addition to serving the new CE/Science Lab, the new mainline will serve future development along the east side of campus and will replace the crushed existing sanitary pipeline that served the water barn (a small building immediately north of the KTVH building on Henry Street). The new sanitary sewer line will be installled approximately 200 feet south of the methane gas interception trench associated with the Corrective Action measures. Upon completion, the new public sewer main will be dedicated to the City of Helena for all future O&M.
Project design and construction will be coordinated with Dr. John Scharf of Carroll College, Mr. Mike Dowling of DTArchitecture, Ms. Jodi Bingham, P.E. of Hydrometrics and with Mr. John Rundquist, Public Works Director for the City of Helena.

I will prepare project plans and specifications for the sanitary sewer extension using the same guidelines, specs, monitoring well and flowable fill plug details as were used to construct the storm drain across the landfill. Please let me know if there will be a problem with this.

Upon completion of this line, I don't believe any utilities would need to cross the landfill to support future infrastructure growth.
Construction of this line is scheduled to begin in June. The design report, plans and specifications will be submitted to the City of Helena and DEQ for review and approval within the next couple of weeks. Thank you for your assistance on this issue.

Sanna M. Yost, P.E.
Senior Civil Engineer
Morrison Maierle, Inc.
(406) 442-3050

Stepp, Tim 12/20/02

From: Sanna Yost [syost@m-m.net]
Sent: Friday, December 20, 2002 1:14 PM
To: martyl@daconstruction.com; regan@daconstruction.com
Cc: CHANSON@ci.helena.mt.us; Corinna Sowder; Kurt Keith; Tim Berry; tstepp@state.mt.us
Subject: Carroll College Storm Drain - Landfill Cap Perforation

Landfill perforation details.z...

Tim Stepp, DEQ, wants this methane gas monitoring well installed in the pipe bedding about 10 ft west of where the landfill cap will be perforated in Centennial Park. It's purpose is to monitor gas that might be leaking through the landfill clay cap perforation. (No gas is supposed to get through, hence the reason for the flowable fill plug). I've attached the sketch of the monitoring well and the plug (in zip file). Please call if you have any questions. Thanks.

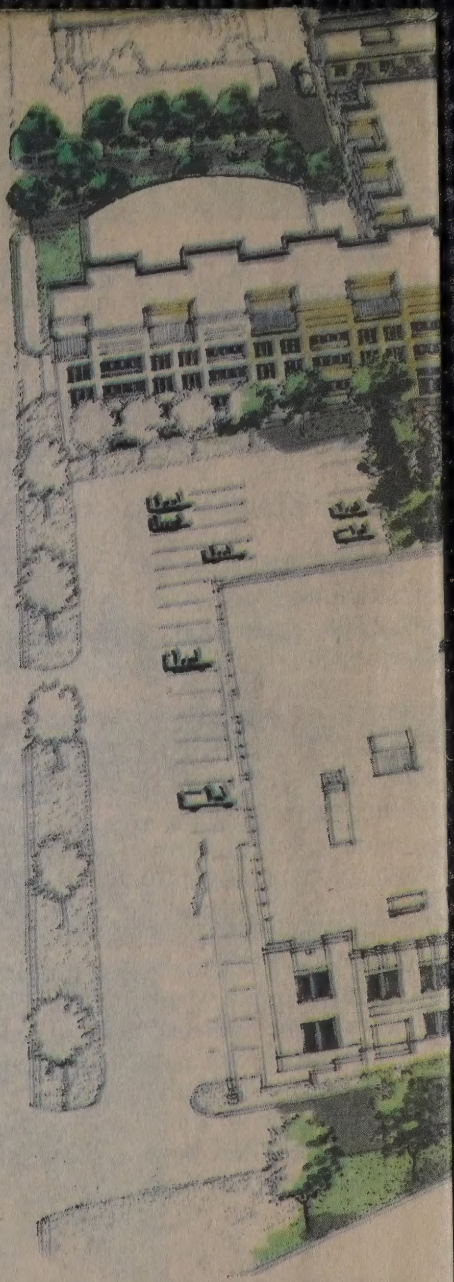
Sanna M. Yost, P.E.
Senior Civil Engineer
Morrison Maierle, Inc.
(406) 442-3050

are the area won't look anything like it does now.

This is the plan:

- The largely vacant space south of the Lyndale Avenue overpass will be home to restaurants, bookstores, condominiums and a carousel.
- North of the overpass, Centennial Park will be a mass of soccer, softball and baseball fields.
- East of the overpass, North Main will be four lanes wide, complete with bike/pedestrian paths and raised medians.
- West of the overpass, the entire orientation of Carroll College will be rotated, with the main entrance facing southeast.
- And the overpass itself will be obsolete, replaced by an at-grade crossing.

Take a walk with us through what could be Helena's new premier downtown attraction, a great place to live, shop and play.



At right is a rendering by Dowling Tintinger Architecture of what the Great Northern Area could look like when the project is completed.

INSIDE

A look at:

GREAT NORTHERN

Developers envision a new 'signature' area for Helena

Page 2D

Special IR Edition

D Section

Helena, Montana | The Independent Record | Wednesday, June 24, 1998

A Bigger Heart for Helena

Plans for the Great Northern Town Center envision it as a new city hub

By EVE BYRON
IR Staff Writer

When the dust settles north of downtown Helena — maybe fewer than 10 years from now — chances are the area won't look anything like it does now.

This is the plan:

- The largely vacant space south of the Lyndale Avenue overpass will be home to restaurants, bookstores, condominiums and a carousel.
- North of the overpass, Centennial Park will be a mass of soccer, softball and baseball fields.
- East of the overpass, North Main will be four lanes wide, complete with bike/pedestrian paths and raised medians.
- West of the overpass, the entire orientation of Carroll College will be rotated, with the main entrance facing southeast.
- And the overpass itself will be obsolete, replaced by an at-grade crossing.

Take a walk with us through what could be Helena's new premier downtown attraction, a great place to live, shop and play.

At right is a rendering by Dowling Tintinger Architecture of what the Great Northern Area could look like when the project is completed.

Helena I.F. Closure

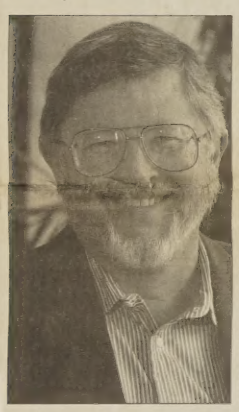
INSIDE
A look at:

Great Northern story

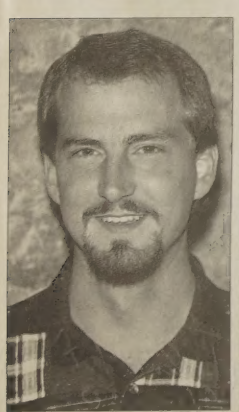
IR photo by George Lane

Above, construction in the Great Northern Area is already running at a steady pace.

Above left, a painting depicts the plans for the area.



"I think this will be a signature piece for Helena. We have lots of those already – the cathedral, the civic center – and this will be another."
– Alan Nicholson



"The tent structure will be three stories tall, and we're planning on uplighting it and leaving those on at night so it will seem like a glowing beacon in Helena."
– Mike Dowling:

Collaboration helping make visions come true

By EVE BYRON
IR Staff Writer

One sunny summer morning 10 years from now, a visitor to Helena might drive into the four-block Great Northern Area via Front Street off of Last Chance Gulch. To the right is a 150-room hotel and convention center; on the left are retail stores. Stopping at the corner, the visitor's eyes are drawn to a three-story-tall canopy-covered outdoor amphitheater, and his ears hear the sweet sounds of calliope music emanating from a carousel.

Turning to the left, he sees rows of trendy clothing shops, book stores and cafes, separated from the street by wide sidewalks. Above are offices and apartments. At the end of the street is a large condominium complex.

Parking is easy — either in the three-level, 420-stall garage or along the street.

Welcome to the dream of Architect Mike Dowling and Developer Alan Nicholson.

□□□□□□

THE TWO began their collaboration about a year ago, when they started talking about designing Nicholson's new development. Dowling saw this as "a once in a lifetime opportunity," to use new techniques to create an old type of neighborhood in his hometown.

"In a typical development ... a person goes to a civil engineer and says 'Let's lay this out to get the maximum square footage of an area and put some streets in here.' It doesn't have a real vision to it," Dowling said. "Alan did it like a more traditional development. He said 'Let's work together with the ideas I have and use your skills as an architect to develop those ideas and turn it into my vision.' "

Dowling walks over to a stack of blueprints and drawings and pulls out a pile of yellow tracing paper.

He demonstrates how they took an aerial view of the four-block area, and tried different combinations of streets, buildings and open spaces to create the type of neighborhood reminiscent of Helena's early days.

Buildings are set close together, with large open areas nearby. Wide sidewalks invite strollers, with large trees providing shade.

□□□□□□

IN CREATING this vision, Nicholson was careful not to do so in a vacuum. He took into consideration the impacts of and to Carroll College, the Federal Reserve Bank, Centennial Park, the Civic Center and people already living in the area. That created a plan that looks at everything "from the macro to the micro," Dowling notes.

Of great aid was a document created by The Consortium, a group of about 25 people who met for more than a year to recommend how the area should be developed.

Nicholson's plan includes many of The Consortium's concepts, including a mixed use of homes, stores and offices.

"I think this is right on the money with what they were talking about," Nicholson said. "They talked about mixed use development with parking in structures rather than surface lots, which will create more density. We're maintaining pedestrian access north to Carroll College, the Rails to Trails (bike/pedestrian path) and Centennial Park. The only thing they didn't talk about was a carousel."

That's his personal touch. Nicholson has been infatuated with carousels since he was a child, and rides the one in Missoula every chance he gets. He sees a Helena carousel as a great way to bring people together.

□□□□□□

AFTER RECEIVING city approval for the project earlier this year, construction work got under way a few months ago. The first building going up is a 23,000-square-foot, four-story structure, which Nicholson calls "The Artisan Block." It will include his office on the fourth floor and D.A. Davidson on the main floor.

From this perch, Nicholson will be able to oversee all other work done in this area.

"I wanted to anchor the development, and this looked like a good place to start," Nicholson said. "It's on the pedestrian mall and main street that goes through there."

In trying to keep this a pedestrian-friendly area, Nicholson zoned the property to prohibit offices from most of the first floors of the buildings. Instead, he wants retail stores on the lower levels.

"That makes it a lively, interesting, active place," Nicholson mused. "I wanted to keep that main level active and open from morning until 10 at night, to be a place where things are happening all the time.

He's also incorporated bike and pedestrian paths into the development, and worked with the city and state to enlarge a lighted tunnel that will connect the Great Northern site with Centennial Park and Carroll College. The 12-by-20-foot tunnel is about double what originally was proposed.

Dowling said they hope a trolley system eventually will be created to connect the project with downtown Helena.

□□□□□□

DOWLING SAID HE EXPECTS the area to be 70 to 80 percent built out within five years. Nicholson is even more optimistic.

"If the economy holds good, it should be built out 70 to 80 percent in three or four years," Nicholson said.

He doesn't plan to do most of the construction, and noted that if someone wanted to purchase the entire property now he would be willing to consider that.

However, that person would have to ensure that the area would be developed to Nicholson's plan.

"We would hold them to the concept of retail on the main level and to creating an interesting, active zone there," Nicholson said.

That's because he and Dowling envision the development becoming one of Helena's "signature pieces," like the Civic Center or Cathedral of St. Helena.

"I think it will be one of the main attractions for Helena," Nicholson said. "It will have a hotel that will bring people down there and a pretty, active carousel, good food and great shopping to draw them outside."

Great Northern Area has a long history

The four-block Great Northern Area hasn't always been vacant. In fact, the area is named for the Great Northern Railway train depot, an imposing two-story structure that was built near Neill and Fuller streets.

Rail lines criss-crossed the site, and a large, landscaped plaza gave the area a European garden feeling.

Excavation for the L-shaped building began in 1912. By 1913, it was complete, with a 100-foot clock tower, brick walls and terra cotta trim.

The floors were finished in mosaic tile, the woodwork was oak and the total cost of the building was about $110,000.

For 20 years, train use at the depot was heavy.

The 1935 earthquakes left the clock tower structurally unsound, and it was torn down that year.

In 1954, the Great Northern moved its operations to a small, wood-frame building at Montana and Lyndale avenues and abandoned the Great Northern site.

Between 1954 and 1988, the Great Northern depot was used as a variety of offices. In 1988, the the building was torn down to make room for the Helena branch of the Federal Reserve Bank of Minneapolis.

Photos courtesy of Montana Historical Society

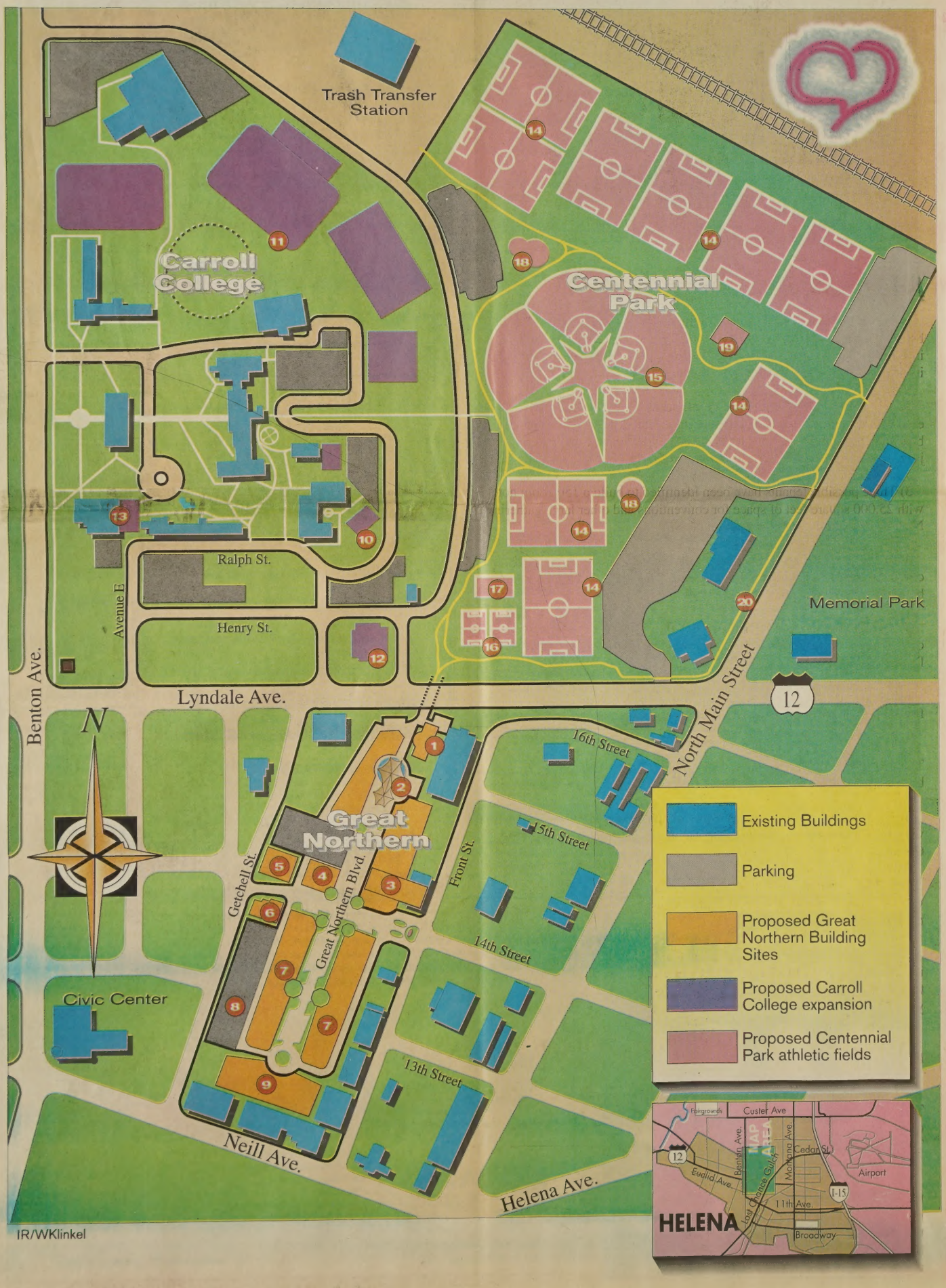
The depot in 1891.

The Great Northern depot and the Civic Center

The Great Northern Area in 1908

Special Edition
The Independent Record

A Bigger Heart for Helena



IR/WKlinkel

A Dowling Tintinger Architecture sketch of what a street scene might be like once the project is complete

A few details

The numbers below correspond to the points on the map at left

1) The 6,000-square-foot carousel building and adjacent facilities should be constructed within the next two years. Developer Alan Nicholson is looking at three options for the 36- to 40-foot diameter "menagerie" carousel itself, which will have a variety of animals on it.

2) A 6,000-square-foot, three-story tall outdoor amphitheater will be covered with a fabric-like roof and lit at night so that it will look like "a glowing beacon." The public event center is expected to be used for everything from jazz concerts to plays. No construction dates have been set.

3) Three possible tenants have been identified to build a 150-room hotel with 25,000 square feet of space for conventions and other large gatherings. Nicholson is aiming for construction in 1999.

4) The 23,000-square-foot Artisan Building will be home to Nicholson's company and D.A. Davidson. It is currently under construction, and should be ready for occupancy by January 1999.

5) A bank building will be between 6,000 to 25,000 square feet, depending on the height of the building. Nicholson has an agreement pending with a local, home-owned bank.

6) The Ahman Brothers real estate company is building a 15,000-square-foot office. It should be ready for occupancy by the summer of 1999.

7) Two- to four-story buildings will line the streets south of Front Street. The first floor will be reserved for retail businesses, and the upper floors can be homes or offices.

8) A three-level parking structure should hold about 420 cars. Its location will allow it to serve people using the Great Northern Area and the Civic Center.

9) A 24- to 40-unit residential condominium is anticipated for this area. It will be four stories tall and about 50,000 square feet, with retail space on the main floor and parking underneath.

10) An addition to the existing Carroll College science building will increase its size by 27,000 square feet. Set on a hilltop, this will help reorient the campus entrance. The goal is to hold classes in the new building by the year 2000.

11) The first games in the new $800,000 Carroll College stadium might be held in the fall of 2000. The grandstand will seat 4,000 people.

12) The new 8,000-square-foot television station is under construction. This $2.5 million project will sit on about two acres, and will provide students with a hands-on environment to work with state of the art technology. Television station KTVH anticipates moving into the new studio this fall.

13) A new campus center should be ready in August. It's an extension of the Commons, and will provide a place for students to hang out and play ping pong, pool or dance, McCarvel said. Located at the southwest side of the campus, the new center will have a larger book store, a lounge, a snack bar and a dance studio. Student offices will be in the building, as will community meeting spaces.

Brand new sports complex will be built on old city dump

IR photo by Jon Ebelt

Young soccer players practice recently on Helena's main soccer field at Centennial/Bausch Park.

City project complements Great Northern Area and Carroll's development

By EVE BYRON
IR Staff Writer

The ultimate compost pile will be transformed into the premier sports complex in Helena if Centennial Park plans come to fruition.

A newly revised layout for the sports complex planned to sit atop the old city dump shows nine soccer fields, five softball fields, one volleyball court and two basketball courts. Also included is a bicycle/jogging path, two playgrounds, a folf course, parking for about 300 vehicles, restrooms and a concession area.

IT'S AN IDEA that's been in the works for quite some time. Randy Lilje, city parks and recreation director, said a study done in 1969 included a lot of the facilities found in the 1998 master plan for Centennial Park that was done by Architect Carl Thuesen.

"This has been a long-term goal of the community," Lilje said. "For years it's been kind of an eyesore in the middle of the city. With the development of that area into a nice, green, highly used public arena, it complements what Carroll College is doing and the Great Northern area. This will transform that area into something that will be of a big benefit to the city."

HE'S NOT SURE how much the complex will cost, or when it will be constructed.

"What's holding up the cost estimate is we have to incorporate some stormwater detention ponds into the design because of the Great Northern Area," Lilje said. "We're also doing more exact computations for cuts and fills. When we finalize the cost estimate we'll also do a phasing plan."

"For years it's been kind of an eyesore in the middle of the city. With the development of that area into a nice, green, highly used public arena, it complements what Carroll College is doing and the Great Northern area. This will transform that area into something that will be of a big benefit to the city."

– Randy Lilje

The first phase will involve building six soccer fields on the vacant dump site on the northern end of the property. The next step will be to install the softball fields and more soccer fields. The final construction will involve soccer fields, the volleyball and basketball courts near the National Guard Armory, and the bike/pedestrian path that surrounds the site.

LILJE SAID SOME of the money to do the work probably will come from the $5 million Open Space bond that voters approved in 1996. He's also seeking some state or federal grant money, and is looking for in-kind labor and services from people who will use the fields.

No excavation work can be done because of the

(More SPORTS, page 7D)

CITY KEEPING AN EYE ON METHANE FROM OLD DUMP

For decades, Helena's garbage was either burned or buried on the triangular piece of property north of the Lyndale Avenue overpass. No one really knows how much is there or exactly what is underneath the dirt and clay cap that covers it.

Very little can be done with the site now. To dig into it probably would unlock a Pandora's box of toxic wastes and methane gas.

This pretty much eliminates the possibility of constructing any buildings on the site. One of the few uses is a city park.

But even that needs to be handled carefully. The rotting garbage creates methane gas, which is highly explosive in certain situations. To alleviate the possibility of a methane buildup, the city has installed a methane extraction system.

"We're drawing the methane into a collection area near the YMCA, which is using it to partially heat their building," said Randy Lilje, city parks and recreation director. "There's a possibility of using it over at Carroll College too. It's just one of those things you need to be aware of after you close up a landfill."

He stressed that the gas doesn't pose a hazard to anyone playing at the site.

Special Edition
The Independent Record

The view from Carroll

Construction making the 'front' of the campus face Lyndale

By EVE BYRON
IR Staff Writer

Watch carefully — the Carroll College campus is rotating.

Ever so slowly, with the construction of new buildings, the campus' focal point is spinning southeast — down toward Lyndale Avenue, away from Benton Avenue.

By the year 2000, Carroll officials expect that the main entrance to the college will be off of Lyndale Avenue. But changing the focus more than the entry is a new visual landmark — a 27,000-square-foot, six-story addition to the college's science and technology building, which sits atop a hill facing downtown Helena.

"We want to change it so that back looks like front, or back becomes front of campus,. We want Getchell to become the main entrance and will orient everything toward that view. It will look more like the front of the campus from North Main ... and the campus will face the city."

– Tom McCarvel

"WE WANT TO change it so that back looks like front, or back becomes front of campus," said Tom McCarvel, Carroll vice president. "We want Getchell to become the main entrance and will orient everything toward that view. It will look more like the front of the campus from North Main ... and the campus will face the city."

Carroll President Matthew Quinn said the revolution of the campus is a pivotal move on the part of the college as it approaches the 21st century.

"IF YOU DON'T move forward, you're moving backward. We decided to leap forward," Quinn said. "The fact that the Great Northern and Centennial Park work began moving at the same time is a synergy that's more happenstance; it's kind of serendipitous."

McCarvel estimates it will take about two years to build the addition, and he hopes classes can be held in there in January 2000. Part of the $7.2 million endeavor also involves remodeling the aging science building, which was constructed in 1957.

IR photo by George Lane

Dr. Matthew Quinn, president of Carroll College, poses with a model depicting the new Science Building that will be constructed on the campus.

THE SCIENCE building, which will be renamed the Mary Alice Fortin Science and Technology Center after a generous donor, isn't the only addition slated for the college.

A new 4,000-seat stadium is rising from the field between the city trash transfer station and the campus buildings. Plans call for constructing the grandstand this summer and putting in the playing field, then allowing the grass to mature for a year. If all goes well, football and soccer games, concerts and lectures could be held in the stadium in the fall of 2000. While cost of the project is about $800,000, all of the materials and labor have been donated.

A NEW CAMPUS CENTER should be ready in August. It's an extension of the Commons, and will provide a place for students to hang out and play ping pong and pool or dance, McCarvel said. Located at the southwest side of the campus, the new center will have a larger book store, a lounge, a snack bar and a dance studio. Student offices will be in the building, as will community meeting spaces.

"WE DIDN'T REALLY HAVE a student center, like a family room in a house, where people can socialize," Quinn said. "We needed a place where people could stop, sit down and have a soft drink or a cup of coffee when they're on campus."

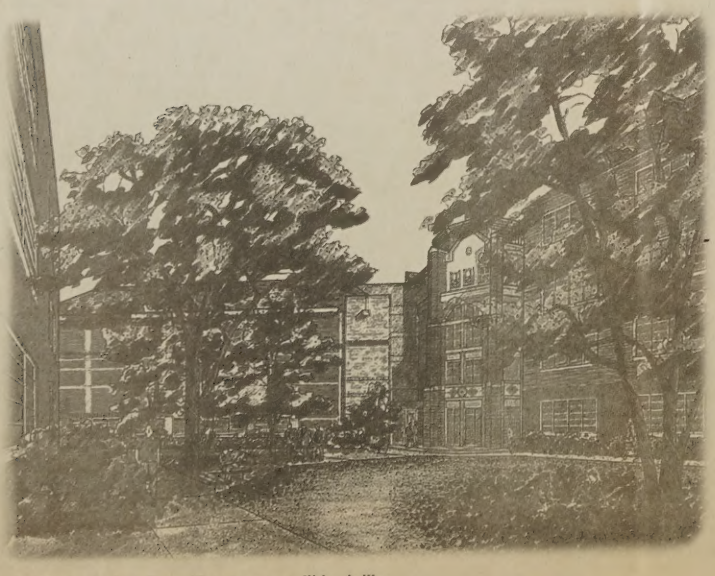
Further south, rows of homes line Lyndale Avenue. The college has been purchasing these as they become available, and eventually hopes to use them for student housing.

"WE ALREADY OWN two-thirds of them," McCarvel said. "We don't have married housing, or housing for upper classmen, who might like a more independent lifestyle but still want to stay on campus."

To the east of those houses, the new 8,000-square-foot television station is under construction. This $2.5 million project will take up about two acres, and will provide students with a hands-on environment to work with state of the art technology. Television station KTVH anticipates moving into the new studio by Aug. 1.

FINALLY, A NEW maintenance building is planned for the northwest edge of campus, with more parking and paving around the athletic complex.

"We have a big appetite, and you need to keep moving, especially at a college," Quinn said. "There's a great deal of vitality, and young people coming into a college want high quality programs and current facilities. That's what we want to provide."



A depiction of what Carroll's campus will look like

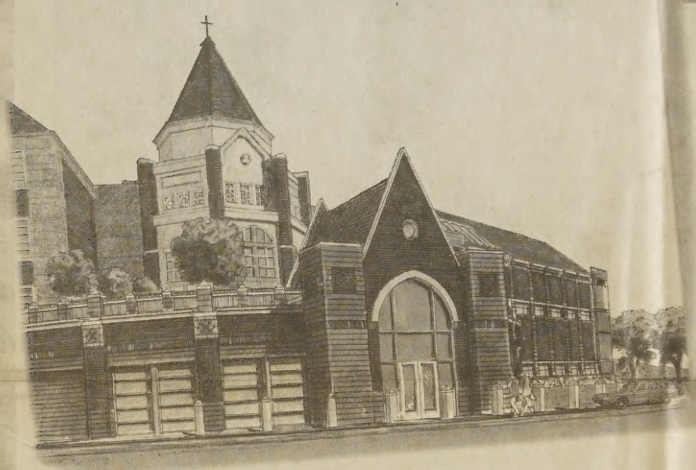
A Bigger Heart

The Independent Record

At left, the Carroll College campus is bustling with new construction, including a new football stadium, science building, KTVH studio and an expansion of the Lower Commons student center.

Below is an architect's rendering of what the college's new science building will look like.

IR photo by George Lane



Carroll's history goes back to 1909

Carroll College was first known as Mount St. Charles High School for boys when it was constructed in 1909. Its first building was the imposing St. Charles Hall, which was completed in 1910 and still dominates the campus.

In September 1916, the first college-level student graduated. The school now has about 1,300 students.

The college was renamed Carroll College in 1932, after Bishop John P. Carroll, who helped acquire the 64-acre site on which the college sits.

A residence facility was constructed on the campus in 1923, a convent in 1925 (which now is a community center), an observatory in 1937, a men's residence hall in 1957, a science hall in 1957, a women's residence and the commons building in 1961, an administration building in 1966, a gymnasium in 1970 and the library in 1979.

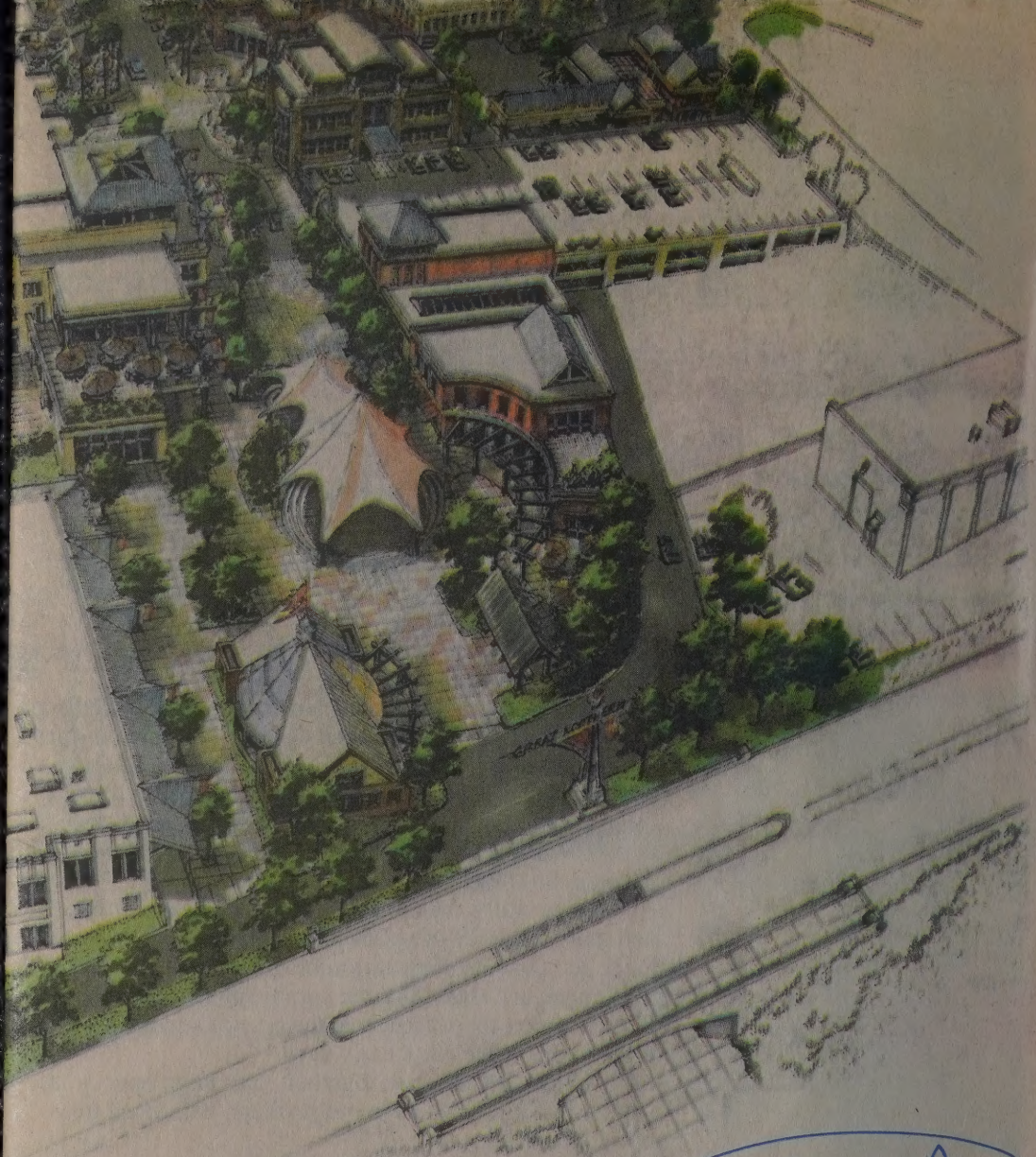
It is Montana's largest private college, with its incoming students ranking in the 20 percent of their high schools.

Sports

Continued from Page 5D

garbage underneath, so the city has started hauling dirt onto the site to make it level. Lilje said he's not sure when the actual construction of the playing fields will begin, or how long it will take to complete the job.

"It could take two or three years or as long as eight to 10 years to complete the last phase of the project, which is the area farthest south," Lilje said.



Helena I. F. Closure

Carroll College

Campus slowly 'turning' to face Lyndale Avenue

Page 6D

Centennial Park

More soccer fields and softball, volleyball and basketball sites

Page 5D

Streets

Lyndale overpass to go, North Main widened

Page 8D

County Lewis + Clark
Facility & # Helena 90

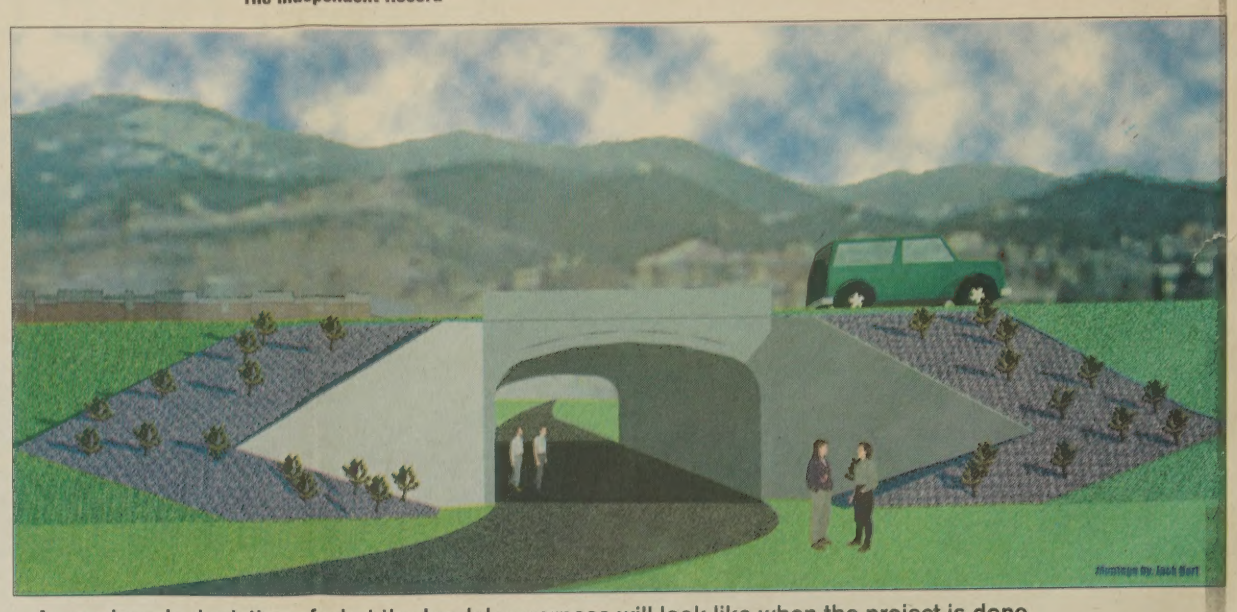
Closure	Landfarm
Finan Assur	Liner
GW Corr Meas	Methane
GW Monitoring	O & M
GW Reports	Run - On
Inspections	

Other:

2-7

Making the traffic flow

Lyndale overpass will be taken down, while North Main gets wider



An engineer's depiction of what the Lyndale overpass will look like when the project is done

By EVE BYRON
IR Staff Writer

Traffic congestion will get worse along North Main Street before it gets better.

But by the year 2002, cars, trucks and other vehicles shouldn't lurch along the highway as they often do now. Instead, traffic should flow smoothly through the new six-lane Cedar/Montana intersection; cruise quickly along the four-lane North Main Street; and turn easily at the five- to six-lane Lyndale Avenue/North Main Street intersection onto Lyndale. Instead of driving over the Lyndale Avenue bridge, vehicles will use an at-grade crossing as they head west toward MacDonald Pass.

IT'S A massive project state traffic officials want to begin in the year 2000.

"It will take a full year of construction and maybe part of the next year," said Jason Giard, district administrator for the Department of Transportation. "We're trying to let the contract in the fall of 1999. Our right-of-way plans are being finalized, and we're working on getting the utilities moved."

Giard said they'll leave it up to the contractor to decide where to start. But he expects work will begin on the Lyndale overpass, since dirt from that excavation will be used as fill along North Main Street.

ONE OF THE Lyndale bridges was constructed in 1936; the other in 1962. Neither meets seismic standards, so the state decided to replace them mainly using federal funds.

Currently, the road on the west side of the Lyndale overpass dips slightly, then rises until the middle of the bridge is about 25 feet above the ground. It then drops down to level off near North Main Street.

It is expected to cost about $1.5 million to take out the dip and crest. They'll be replaced with a 15-foot-tall roadway that will go straight across. Underneath the road will be a 12-foot-tall, 20-foot-wide, 130-foot-long tunnel connecting the Great Northern Area to Centennial Park and Carroll College.

"IT'S FAIRLY EASY to see how it will go if you look at it from the side," Giard said. "Visually, this will be a fairly major change. Somebody who hasn't been here for 10 years will come back and look at that and be really surprised. Lowering the grade 10 to 15 feet is pretty major."

Giard said he's leaving the decision on how to manage traffic during construction to whomever submits the lowest bid for the project. Usually, though, vehicles are routed to one bridge while work is done on the other, creating a two-way traffic situation.

THIS PORTION of the road reconstruction should go fairly quickly, Giard said. The $5 million North Main project will be a little more lengthy, with a bit more traffic disruption.

The two-lane stretch between Lyndale and Montana avenues will be doubled to four lanes, complete with a raised median and bike/pedestrian paths.

Additional turn lanes will be created at both the Lyndale/North Main and the Montana/North Main intersections, which will widen those streets to six lanes in some places. Turn lanes also will be installed at the YMCA and Memorial Park entrances.

IR photo by Jon Ebelt

Traffic is heavy along Main Street near Memorial Park at the end of a recent business day.

ACCESS TO some streets will be modified, with Memorial Drive limited to right in/right out movements; Poplar Street will be closed at North Main; and Chestnut Street will be realigned to connect with Villard Avenue.

The wider streets will cut into some private property, eliminate some parking, and force the removal of some trees.

TO MITIGATE construction impacts, an environmental assessment recommends limiting noise-generating activities to daytime hours in residential areas; requiring mufflers on construction equipment; using dust suppression and erosion-control methods; and developing traffic-control plans.

"Visually, this (the Lyndale overpass replacement) will be a fairly major change. Somebody who hasn't been here for 10 years will come back and look at that and be really surprised." – Jason Giard

County: Lewis + Clark
Facility & #: Helena 90

Closure	Landfarm
Finan Assur	Liner
GW Corr Meas	Methane
GW Monitoring	O & M
GW Reports	Run - On
Inspections	

Other:

27

to Pat Crowley
FYI,
Bob Jeffrey

90

County L+C
Facility & # Old Helena

Closure
Finan Assur
GW Corr Meas
GW Monitoring
GW Reports
Inspections
Other:

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Air Resources Management Bureau

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Dept. of Enviro. Quality
Waste & Underground
Tank Management Bureau

January 28, 2004

Montana Department of Environmental Quality
Air & Waste Management Bureau
P.O. Box 200901
Helena, MT 59620-0901

Dear Sirs,

On behalf of the City of Helena, I am submitting the Annual Emissions Inventory for the City of Helena Landfill, plant ID 049 0014. The YMCA gas extraction system operated all of last year with a combined average flow of 46.3 cfm from the six extraction wells. Air samples collected from the stack indicate than the average VOC concentration exiting the stack is 5.25 mg/m^3. This is a total of 7.96 pounds (lb) of VOC's for last year or a standard emission factor of 3.98 lb/acre for the 2-acre landfill gas extraction system. The area of the entire landfill is approximately 65 acres. Attached are several tables showing all the data collected at the gas extraction system over the last year as well as the calculations used to determine the standard emission factor.

The vehicle miles traveled on the facility area covered by the air quality permit is very difficult to determine for this area as it has all been reclaimed. The Phase I landfill is now the YMCA and parking lot, skate board park, and Centennial Park (established parkland). All vehicles in this area are confined to paved areas except the City of Helena Parks Department employees performing routine maintenance on equipment and the sprinkler system. This work is accomplished by light-duty vehicles primarily staged on the walking trail and entails approximately 1000 miles per year. In addition, a lawn tractor is used for mowing purposes, but mileage for the mower is not tracked. Typically, additional vehicular travel in his area is strictly prohibited; however, due to the construction completed during the last year, both light-duty and heavy-duty vehicles have traveled an undermined number of miles on the southern third of the Phase I landfill.

The vast majority of the Phase II landfill is typically not open to vehicle traffic; however, during the last year, approximately 2.5' of fill material has been placed on the surface for future softball fields. During fill placement activities, both light-duty and heavy-duty vehicles traveled an unknown number of miles on the western portion of the Phase II landfill. Another small section of the northern Phase II landfill is in active use as a deposit area for recycled garbage such as tires, glass, and refrigeration units. The area is primarily used by light-duty vehicles to deposit material and mileage is not tracked. City staff use single-axle rollout truck containers to haul this material to proper disposal areas. The surface of the area has been covered with asphalt millings approximately 6" deep to ensure the integrity of the covered landfill.

The Phase II landfill has a clay cover seeded with native grasses and has been fenced from the general public. Vehicle travel is restricted to light-duty trucks for maintenance and billboard access. This travel was estimated at 50 miles per year. The transfer station access roads also sit on a small portion of the Phase III landfill. These roads were developed over the clay cover and consist of a gravel base 8" deep and 3" of asphalt. The access roads ensure the integrity of the cover material.

If you have any questions concerning this data or need any additional information to complete the emissions inventory, please do not hesitate to call me at 443-4150 Ext. 172.

Sincerely,

for

Jodi Bingham, P.E.
Environmental Engineer/Chemist
Hydrometrics, Inc.
3020 Bozeman Ave.
Helena, MT 59601
jbingham@hydrometrics.com

C: John Rundquist, City of Helena Public Works Director
Bill Michaelson, City of Helena Streets and Solid Waste Superintendent
Mike Wignot, Hydrometrics

Annual Average Measurements at Extraction Wells

Well	Average Flow (cfm)	Average % CH_4	Average % CO_2	Average % O_2	Average % Residual Nitrogen
EW-1	3.1	0.0	9.6	6.1	61.6
EW-2	1.8	0.0	2.7	15.5	23.5
EW-3	14.3	6.0	14.2	1.2	74.1
EW-4	9.5	2.5	12.5	2.7	72.3
EW-5	13.5	9.0	16.5	0.3	73.2
EW-6	4.0	15.2	19.0	0.1	65.3
TOTAL	**46.3**				

YMCA Gas Extraction System Stack Gas Sample Results Summary (mg/m^3)

Compound	1/21/2003	2/27/2003	3/25/2003	4/30/2003	5/30/2003	6/30/2003	7/29/2003	8/15/2003	9/18/2003	########	########	Average
Dichlorodifluoromethane	3.42	3.86	3.72	(2.2)J	2.82	3.52	3.58	6.24	4.54	6.5	6.1	4.23
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	2.92	(2.5)J	(2.4)J	0.71
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	(1.6)J	0.15
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	(1.8)J	0.16
TOTAL												**5.25**

ND = Not Detected at the reporting limit
J = Estimated Value. The analyte was present but less than the reporting limit.
No sample was taken in October due to extraction system maintenance and repairs.

Pounds of VOC's Released by YMCA Gas Extraction System

5.25 mg/m3 * 46.3 ft3/min * 365 days/year * 1440 min/day * 0.028316 m3/ft3 * 0.001 g/mg * 1 lb/453.6 g = **7.96** **lb/year**

Standard Emission Factor

7.96 lb / 2 acres = **3.98** **lb/acre**

HELENA LANDFILL
GAS EXTRACTION SYSTEM

WELL 1

DATE	DP (mB)	FLOW (CFM)	% CH4	%CO2	%O2	% RN	TEMP (DEG F)
1/21/2003		no measurement - well unaccessible					23
2/27/2003	0.0	0.0	0.0	6.1	8.4	53.9	20
3/24/2003	0.0	0.0	0.0	6.4	8.5	53.1	32
4/29/2003	0.0	0.0	0.0	6.3	9.9	46.6	45
5/30/2003	0.0	0.0	0.0	6.6	9.5	48.2	74
6/30/2003	0.1	0.9	0.0	7.7	7.0	59.0	75
7/29/2003	0.1	0.9	0.0	11.0	4.3	68.5	83
8/15/2003	0.2	1.8	0.0	12.0	3.4	71.8	76
9/18/2003	0.0	0.0	0.0	12.0	3.9	69.4	49
10/28/2003		no measurement - system unoperational					
11/25/2003	0.8	6.8	0.0	6.5	10.2	44.9	29
12/31/2003	0.7	6.2	0.0	6.4	8.5	53.1	nm
Average		**3.1**	**0.0**	**9.6**	**6.1**	**61.6**	

HELENA LANDFILL
GAS EXTRACTION SYSTEM

WELL 2

DATE	DP (mB)	FLOW (CFM)	% CH4	%CO2	%O2	% RN	TEMP (DEG F)
1/21/2003	0.0	0.0	0.0	1.5	17.7	14.2	26
2/27/2003	0.0	0.0	0.0	1.4	17.8	13.9	28
3/24/2003	0.0	0.0	0.0	1.1	18.2	12.3	39
4/29/2003	0.0	0.0	0.0	1.1	17.9	13.7	49
5/30/2003	0.0	0.0	0.0	1.4	16.8	18.6	76
6/30/2003	0.3	2.6	0.0	2.1	15.8	22.7	77
7/29/2003	0.0	0.0	0.0	4.2	12.4	36.8	83
8/15/2003	0.3	2.6	0.0	5.6	10.9	42.5	82
9/18/2003	0.0	0.0	0.0	5.8	12.1	36.6	52
10/28/2003			no measurement - system unoperational				
11/25/2003	0.8	6.8	0.0	3.5	14.7	26.5	31
12/31/2003	0.5	4.4	0.0	2.3	16.2	20.6	22
Average		**1.8**	**0.0**	**2.7**	**15.5**	**23.5**	

HELENA LANDFILL
GAS EXTRACTION SYSTEM

WELL 3

DATE	DP (mB)	FLOW (CFM)	% CH4	%CO2	%O2	% RN	TEMP (DEG F)
1/21/2003	2.7	12.3	7.2	13.0	1.5	72.7	60
2/27/2003	1.3	9.0	2.5	11.0	3.2	71.3	75
3/24/2003	3.8	13.9	4.2	13.0	1.3	76.6	53
4/29/2003	4.1	14.2	4.5	14.0	1.1	76.3	62
5/30/2003	4.2	14.3	4.0	14.0	1.6	74.4	70
6/30/2003	4.4	14.5	5.5	15.0	1.1	74.3	73
7/29/2003	4.0	14.1	5.4	16.0	0.9	74.3	78
8/15/2003	4.3	14.4	5.4	16.0	0.6	75.7	76
9/18/2003	3.9	14.0	7.2	16.0	0.5	74.4	71
10/28/2003			no measurement - system unoperational				
11/25/2003	4.5	14.6	8.7	14.0	1.1	72.1	66
12/31/2003	3.4	13.4	11.0	14.0	0.3	73.6	62
Average		**14.3**	**6.0**	**14.2**	**1.2**	**74.1**	

HELENA LANDFILL
GAS EXTRACTION SYSTEM

WELL 4

DATE	DP (mB)	FLOW (CFM)	% CH4	%CO2	%O2	% RN	TEMP (DEG F)
1/21/2003	0.8	6.8	2.4	11.0	3.4	70.4	76
2/27/2003	1.3	9.0	2.5	11.0	3.2	71.3	75
3/24/2003	1.6	10.0	1.8	11.0	4.0	68.2	75
4/29/2003	1.5	9.7	1.8	12.0	3.4	70.0	77
5/30/2003	2.0	11.0	2.1	12.0	3.1	71.1	84
6/30/2003	1.8	10.5	2.2	13.0	2.6	72.4	87
7/29/2003	2.0	11.0	2.4	14.0	2.5	71.7	92
8/15/2003	1.3	9.0	2.3	14.0	1.9	74.7	92
9/18/2003	0.6	5.3	2.4	14.0	1.6	76.0	85
10/28/2003			no measurement - system unoperational				
11/25/2003	1.5	9.7	3.5	13.0	1.9	74.5	77
12/31/2003	1.4	9.4	4.0	13.0	1.7	74.9	72
Average		**9.5**	**2.5**	**12.5**	**2.7**	**72.3**	

HELENA LANDFILL
GAS EXTRACTION SYSTEM

WELL 5

DATE	DP (mB)	FLOW (CFM)	% CH4	%CO2	%O2	% RN	TEMP (DEG F)
1/21/2003	2.7	12.3	8.7	15.0	0.6	73.4	54
2/27/2003	2.8	12.5	8.9	15.0	0.3	74.7	52
3/24/2003	3.2	13.1	6.2	15.0	0.2	77.8	55
4/29/2003	2.9	12.6	6.7	16.0	0.2	76.3	59
5/30/2003	3.7	13.7	7.1	15.0	0.3	76.5	68
6/30/2003	3.4	13.4	8.8	17.0	0.4	72.3	72
7/29/2003	3.6	13.6	7.7	17.0	0.4	73.4	77
8/15/2003	4.0	14.1	7.4	17.0	0.2	74.6	79
9/18/2003	3.2	13.1	10.5	18.0	0.1	71.0	75
10/28/2003			no measurement - system unoperational				
11/25/2003	4.0	14.1	14.0	18.0	0.1	67.5	65
12/31/2003	4.5	14.6	13.5	18.0	0.1	68.0	59
Average		**13.5**	**9.0**	**16.5**	**0.3**	**73.2**	

HELENA LANDFILL
GAS EXTRACTION SYSTEM

WELL 6

DATE	DP (mB)	FLOW (CFM)	% CH4	%CO2	%O2	% RN	TEMP (DEG F)
1/21/2003	0.0	0.0	15.0	17.0	0.1	67.5	35
2/21/2002			no measurement - well unaccessible				
3/24/2003	0.0	0.0	17.5	18.0	0.1	64.0	39
4/29/2003	0.0	0.0	15.5	19.0	0.3	64.1	46
5/30/2003	0.7	6.2	14.5	18.0	0.4	65.6	61
6/30/2003	0.9	7.4	14.0	14.0	0.0	72.0	64
7/29/2003	0.5	4.4	13.5	21.0	0.1	65.0	61
8/15/2003	0.7	6.2	14.6	20.0	0.0	65.4	64
9/18/2003	0.2	1.8	16.5	22.0	0.0	61.5	51
10/28/2003			no measurement - system unoperational				
11/25/2003	0.7	6.2	15.5	22.0	0.0	62.5	41
12/31/2003	0.7	6.2	15.0	19.0	0.1	65.5	36
Average		**4.0**	**15.2**	**19.0**	**0.1**	**65.3**	

CITY OF HELENA

Public Works – Solid Waste
316 North Park Avenue
Helena, MT 59623
Telephone: 406/447-1566

City of Helena

January 22, 2003

RECEIVED

JAN 27 2003

MONTANA
DEPT. OF ENVIRONMENTAL QUALITY
COMMUNITY SERVICES BUREAU

Pierce & Associates - Builders
Attn: Bill Pierce
1424 Dodge Avenue
Helena, MT 59601

Re: Old Glory Flag Pole

Dear Mr. Pierce,

I have received the letter from DEQ relating to the construction of the Old Glory Flag Pole. In this letter Mr. Stepp had made you aware that excavated solid waste material must be removed to the Transfer Station. The material does require proper disposal but we found, this last summer, with the excavation of storm drain lines in Centennial Park the material could not be accommodated at the Transfer Station. The excavated waste material had an excessive amount of rock & dirt and would have resulted in damage to our trailer units and their walking floors for unloading. This past summer we allowed Helena Sand & Gravel to haul directly to the "Site E" landfill since we were unable to handle the material at the Transfer Station. This process required all loads be covered and secured. I would anticipate the same process with excavation of this site.

At the time of construction, I would appreciate a call and we can determine at that time where the excavated waste material will be hauled. In the event that material is hauled directly to the landfill, you will need to make arrangements with Will Selser, Solid Waste Manager, 227-1189 regarding weighing your trucks and payment for disposal.

If you have any questions, feel free to call me at 447-1566.

Sincerely,

Bill Michalson

Bill Michalson
Solid Water Superintendent

BM:kc

Cc: Robert Henkel, Old Glory Project Manager
Will Selser, L&C County Solid Waste Manager
Tim Stepp, DEQ, Solid Waste Program

Montana Department of
ENVIRONMENTAL QUALITY
Judy Martz, Governor
P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.state.mt.us

MAILED
01-13-03 JH

January 7, 2003

John Rundquist
316 N Park Ave
Helena MT 59624

RE: METHANE MIGRATION MEASURES—CARROLL DORM STORMWATER PIPE
City of Helena Class II Landfill (Lic. #90)

Dear Mr. Rundquist:

We have reviewed the submittals from Sanna Yost, P.E. (Morrison-Maierle consultant to Carroll College), for construction of the new Carroll dorm stormwater pipe beneath the cover of the old Phase I landfill unit on the south end of the City of Helena Class II facility. The pipe trench will penetrate the southwestern margin of the landfill cover and head eastward to connect with the concrete subdrain that is buried beneath the Phase I unit.

The plans and specifications are approved with two improvements prior to construction:
(1) The net length of the flowable fill plug that blocks methane migration within the Type-I pipe bedding must be at least twice the horizontal length of the actual cover penetration and be centered on the midpoint.
(2) The perforated PVC standpipe must be installed within the pipe bedding at the City property boundary to monitor methane migration and must be constructed with a PVC screw cap that contains a nipple and stopcock for a surgical hose hook-up during quarterly measurements.

As discussed, the compacted trench backfill will replace the landfill cover and all excavated waste must be removed to the transfer station. Please update your Methane Monitoring Plan by providing us with complete copies of the final buildout plans and specifications of the pipe trench plug/well and all existing methane venting trenches and methane monitoring wells located on the western facility boundary with Carroll College. The updated plan should also identify the new methane monitoring well in the stormwater pipe trench as another boundary test point for the required quarterly monitoring of methane migration from the facility. Plans, specifications, and a schedule for replacing methane monitoring wells lost during construction on the eastern boundary should also be provided.

We thank you for your cooperation. If you have any questions or comments, please contact me at the Permitting and Compliance Division, Community Services Bureau, Waste Management Section: Voice (406) 444-4725, email *tstepp@state.mt.us* or FAX (406) 444-1374

Sincerely,

Tim Stepp
Solid Waste Program

Cc: Sanna Yost, P.E., Morrison-Maierle Engineering, Helena
File: **Lic. #90** /Lewis & Clark Co/City of Helena/Class II/Methane Monitoring
Path: G:\CSB\S w s\engineering\helena\Helena_methDorm0103.doc

MAILED

INITIALS TS DATE 1/6/03

SW OUTGOING CORRESPONDENCE

NEW APPLICATION	Initial / Date
Janet H	
Rick T	
HAC	

INSPECTIONS	Initial / Date
Pat C	
Janet H	
Rick T	
HAC	

CLOSURES	Initial / Date
Pat C	
Janet H	
Rick T	
HAC	

FEES	Initial / Date
Janet H	
Rick T	
HAC	

COMPLAINTS	Initial / Date
Pat C	
Janet H	
Rick T	
HAC	

GROUND WATER	Initial / Date
Pat C	
Janet H	
Rick T	

GEN CORRESPONDENCE	Initial / Date
Pat C	
Janet H	
Rick T	

☒ ~~MISCELLANEOUS~~ ENG	Initial / Date
Janet H.	JH 1-8-03
Pat C.	PPC 1/8
Rick T.	RT 1-10-03

830 N Warren 59601

910 Helena Ave 59604

PO 6147

GUARDIAN OF THE GULCH

City of Helena

CITY OF HELENA

Public Works – Solid Waste
316 North Park Avenue
Helena, MT 59623
Telephone: 406/447-1566

RECEIVED
OCT 2 3 2002
MONTANA
DEPT. OF ENVIRONMENTAL QUALITY
COMMUNITY SERVICES BUREAU

October 21, 2002

Montana State DEQ
Attn: Mr. DaSilva
P.O. Box 200901
Helena, MT 59620-0901

Re: City of Helena Class II Landfill (License #90) – Final Closure

Dear Mr. DaSilva,

In February 2002, we were unable to find the original license for our Class II Landfill (License #90). I had requested that you review our files at that time to determine whether or not this had been surrendered.

We recently researched some additional files and have found the original license which I am including with this letter. I apologize for the delay in surrendering the license. We have had numerous changes in staff and relocation of our records at the time the closure was occurring.

Sincerely,

Bill Michalson

Bill Michalson
Solid Water Superintendent

BM:kc

Enclosure (1)

DEPARTMENT OF ENVIRONMENTAL QUALITY
PERMITTING AND COMPLIANCE DIVISION
SOLID WASTE MANAGEMENT PROGRAM

SOLID WASTE MANAGEMENT SYSTEM
ANNUAL RENEWAL CERTIFICATE

This certifies that

CITY OF HELENA

has been approved for renewal and is validly licensed for the period of July 1, 1997 throught June 30, 1998 by the Montana Department of Environmental Quality

as a

Class II Landfill

SYSTEM LICENSE NUMBER 90

This renewal certificate is contingent upon payment of fees for July 1, 1997 throught June 30, 1998.

The license as validated by this certificate may be revoked if the Licensee or the Owner/Operator violates any provisions of Title 75, Chapter 10, Parts 1 and 2, Montana Code Annotated, or rules adopted in accordance with that law.

Jon Dilliard
Bureau Chief

THIS CERTIFICATE IS NON-TRANSFERABLE

#90

County L+C
Facility & # Helena L.F.

Closure	Landfarm
Finan Assur	Liner
GW Corr Meas	Methane
GW Monitoring	O & M
GW Reports	Run - On
Inspections	

Other:

Crowley, Patrick

From: Olsen, Arnie
Sent: Friday, September 27, 2002 4:37
To: Crowley, Patrick
Subject: RE: Centennial Park Landfill

Patrick, Thanks for your note. We are aware of the issue and have done some work on it. We know it will cost more to build where there is landfill but all three of our options have additional costs(i.e. purchasing land, demolition etc.). Our next step would be to do some engineering work and possibly an E.A. or an E.I.S. on the site to address the matter fully and to obtain costs for mitigation if we proceed on this site. We have several steps to go through before we get that far.I may be talking to you in the future more about this. We have a preferred and two alternative sites so we will see what happens.Thanks for your interest. Arnie Olsen.

-----Original Message-----
From: Crowley, Patrick
Sent: Wednesday, September 25, 2002 1:26 PM
To: Olsen, Arnie
Subject: Centennial Park Landfill

Mr. Olsen:

I see you are possibly interested in using part of Centennial Park as a site for the new State Museum. I hope you realize that much of the park is the old city landfill. There is a methane gas extraction system near the YMCA and that building has a positive pressure air system to keep the methane out of the basement.

Building on old landfills is strongly discouraged because of poor foundation conditions and the possibility of gas migration. These negatives can be mitigated, but it might add substantially to the cost of site preparation.

If I can be of any help, please feel free to contact me.

F. Patrick Crowley
Solid Waste Regulatory Program Manager
Montana Department of Environmental Quality
Permitting and Compliance Division
P.O. Box 200901
Helena, MT 59620-0901
phone: (406) 444-5294
Fax: (406) 444-1374
mailto:pcrowley@state.mt.us

City of Helena
316 N. Park Avenue
Helena, Montana 59623

RECEIVED
JUL 02 2001
MONTANA
DEPT. OF ENVIRONMENTAL QUALITY
COMMUNITY SERVICES BUREAU

June 18, 2001

Mike DaSilva
Licensing Program Manager
P.O. Box 200901
Helena, MT 59620-0901

RE: Maintenance of cover, Facility # 90.

Dear Mr. DaSilva:

The City of Helena Landfill site was re-seeded early this spring and is currently showing signs of new vegetation. As of this date, we have obtained some additional clay cover from Site E and placed the material near the eroded areas located on the north slope of the landfill. This material will be placed just as soon as the slope dries out a bit so we do not damage the existing vegetation on these slopes.

Sincerely,

Bill Michalson

Bill Michalson
Solid Waste Superintendent

County Lewis & Clark
Facility & # 90
~~Closure~~ Landfarm
Finan Assur Liner
GW Corr Meas Methane
GW Monitoring O & M
GW Reports Run - On
Inspections
Other:

SW\dasilva.ltr

90

County L+C

Facility & # Helena L.F.

Closure

Finan Assur

GW Corr Meas

GW Monitoring

GW Reports

Inspections

Other:

Landfarm

Liner

Methane

O & M

Run - On

Montana Department of
ENVIRONMENTAL QUALITY
Judy H. Martz, Governor
P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • Website: www.deq.state.mt.us

May 16, 2001

Rosemary Rowe
EPA Region VIII
Montana Office
Interoffice delivery

RE: Targeted Brownfields Assessment Report, Centennial Park

Dear Rosemary:

Thank you for providing the Montana Department of Environmental Quality (DEQ) the opportunity to review the Targeted Brownfields Assessment Report for Centennial Park, Helena, Lewis and Clark County, Montana (TBA). DEQ would like to offer the following comments and suggestions.

Specific Comments:

1. Section 2.0: The bullet list identifies the objectives of the TBA process. Please include specific objectives for this document.

2. Section 3.0: Please refer to the Phase One consistently with either a "1" or "I."

3. Section 3.4:
   a. Fourth paragraph (page 7): Please note in the text that the site was delisted from the Comprehensive Environmental Cleanup and Responsibility Act (CECRA) priorities list in 1996 and referred to DEQ's Community Services Bureau/Permitting and Compliance Division (CSB/PCD) as an active landfill. Please continue to clarify that the Corrective Measures Assessment (CMA) and subsequent corrective measures were conducted under CSB/PCD oversight.
   b. Fifth paragarph (page 8):
      - Please use the acronym "MGP" instead of "MPG" for the Manufactured Gas Plant.
      - Please clarify that the voluntary cleanup performed at the MGP was under the authority of the Remediation Division/Site Response Section (RD/SRS) and that the gasoline release is under the purview of the RD/Petroleum Release Section. Through the work performed with the RD/SRS, additional soil contamination was discovered in the right-of-way for North Main Street requiring further investigation and potential remediation.
   c. Last paragraph (page 8): The report briefly discusses methane gas investigations on Carroll College property. Please expand the discussion to include a summary of sampling, investigation details, and findings.

4. Section 4.1.1, first paragraph: Please include reference to the Montana Numeric Water Quality Standards Circular 7 (WQB-7).

5. Section 4.1.1, fourth bullet: Please provide justification or cite a reference for the potential source of the nitrate+nitrite being the Montana Power Company (MPC) MGP.

6. Section 4.1.3, second paragraph: Please confirm the presence or absence of deed restrictions or institutional controls for the landfill property.

7. Section 4.1.4: Please note the "chlorinated pool water" may be from the pool located at the YMCA for those not familiar with the YMCA facilities.

8. Section 4.2.1: Please expand the discussion of the groundwater extraction system and irrigation pond to include the regulatory authority providing approval and oversight and details of the pond construction (e.g., liner, access, etc.).

9. Section 6.1: DEQ recognizes this is not a detailed Sampling and Analysis Plan; however, the text identifies the analyses recommended for the composite soil samples and the discrete depth soil samples but does not provide such information for the opportunity soil samples, background soil samples, or surface water samples. Please include suggested analytes and methods for all recommended sampling, giving consideration to volatile and semivolatile organic compounds and pentachlorophenol. Railroad ties may also be associated with chromium and pentachlorophenol. These compounds should also be noted.

10. Section 6.1, first bullet: Please identify the depth interval suggested for the composite samples.

11. Section 6.4: Please note DEQ does not use EPA's Region III Risk-Based Concentrations (RBCs) for screening purposes. Please clarify the application of EPA Region IX Preliminary Remediation Goals (PRGs) for direct exposure to residential soils and Soil Screening Levels (SSLs) for migration of contaminants from soil to groundwater. DEQ applies a dilution attenuation factor of 10 to the SSLs in Montana. DEQ also divides the non-carcinogen PRGs by 10 to assure the overall hazard index for the site will not exceed one.

12. General for Figures: The YMCA and Phase I are located on North Main Street. The text refers to North Main Street as a property boundary; however, the figures identify the street as Last Chance Gulch. Please revise the figures to accurately and consistently reflect the street name as North Main Street.

13. Figure 5:
    a. Please define "offsite user." Please clarify if this is a recreational, residential, commercial, indoor, or outdoor receptor. The term "offsite user" may be too broad.
    b. Please include or clarify the presence of the indoor air exposure pathway in this model.
    c. Please include ecological pathways in this model as the text and title of the figure states they are included.

14. Figure 6:
    a. Please provide a legend for the diagram. It is evident the figure is not complete as presented in the TBA report.
    b. Please describe the "Linkage Feature" on the west portion of the site.
    c. DEQ was unable to locate restroom, equipment storage, or concession facilities on the figure. These facilities are not discussed in the text. DEQ suggests that the users of the park facilities will require such infrastructure. Please include or explain the omission.

General Comments:

The following are general comments on the Centennial Park Master Plan as presented and discussed and how the proposed development may impact or be impacted by the existing landfill. DEQ offers the following as potential impacts requiring further investigation without offering specific solutions.

1. The unknown depth and elements of the "cap" on Phase I and II should be quantified through shallow and controlled soil boring activities.

2. Historical landfill areas are prone to extensive subsidence and settlement over time. Such potential must be considered when increasing the "cap" materials and depths, during final grading, and anticipated with maintenance planning.

3. The addition of paved surfaces reduces the potential for surface water infiltration over the area; however, they increase the volume of storm water runoff at localized areas. Collection, control, and off-site disposal of such runoff should be considered as not to impact the "cap" at the point of discharge.

4. Even though rest rooms, maintenance shops, facility storage, concessions, and associated infrastructure were not identified on the Master Plan, impacts from such structures should be considered. For example, the depth and location of water and sewer lines, electric and gas lines, and foundations shall consider the potential for penetration of the "cap" and subsequent release of methane gas through and around the structures.

5. The design and construction of any enclosed structure should consider the potential for methane gas accumulation and the need to remediate such impacts.

6. The size of imported trees should consider root depth and potential impact to the "cap." The species of tree should have shallow root systems or be provided an aboveground planter in which to grow.

7. At present, only a limited portion of the site receives additional irrigation. Please consider the impact of additional surface water infiltration on the integrity of the "cap."

8. Impacts from the construction and installation of bleachers, goal posts, flying disc golf poles, playground equipment, and lighting should be considered. Such structures could penetrate

the "cap" and either come in contact with waste, provide a location of direct surface water infiltration, or a location of localized methane gas release.

9. If the groundwater under the park is to be used for on-site irrigation, DEQ suggests collecting current contaminant concentration data to evaluate the potential impact of such contaminants on the vegetated surfaces and any humans or animals that may come in contact with the water or irrigated surfaces. Tetrachloroethylene (PCE) is a main contaminant of concern at the Bozeman Solvent Site (BSS). In 1995, the Agency for Toxic Substances and Disease Registry (ATSDR) performed a health consultation in response to specific questions posed by DEQ. Based on average PCE concentrations ranging from 17 to 80 parts per billion (ppb) in the groundwater, ATSDR concluded the following: "…the total amount of PCE that a child would be exposed to as a result of playing in sprinklers spraying contaminated water does not constitute a health concern." A copy of the 1995 Health Consultation is enclosed for your information. DEQ suggests current contaminant concentrations from an on-site irrigation well be provided to ATSDR with a request to perform a similar health consultation for Centennial Park. Another study at the BSS sampled soils irrigated with PCE-contaminated water and did not find detectable levels of PCE in the soils post-irrigation. Again, DEQ suggests a site-specific study be performed for Centennial Park, as appropriate. It is known that PCE does not bioaccumulate in plant tissue. At a minimum, DEQ suggests signage identifying the irrigation water as not from a potable supply.

Please feel free to contact me with any questions or concerns. I can be reached at 406-444-0497 or electronically at clecours@state.mt.us.

Sincerely,

Catherine LeCours
Environmental Specialist

Enclosure: BSS ATSDR 1995

cc (w/o enclosure): Patrick Crowley, DEQ-Permitting and Compliance Division
Aimee Reynolds, DEQ-Remediation Division, Brownfields Coordinator

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service
Agency for Toxic Substances
and Disease Registry

Memorandum

Site/O.U. BSS
DEQ File # 20-12-11-02
Admin. Record Yes X No
Administrative Record #
Confidential Yes No X
Key Words/Comments:

Date April 21, 1995

From ATSDR Regional Representative, Region VIII

Subject Health Consultation: Bozeman Solvents Site (809B)
Bozeman, Montana

To Glenn J. Tucker
Senior ATSDR Regional Representative
ATSDR Region VIII
Denver, Colorado
Through: Director, DHAC (E32) HE for RCW
Acting Chief, EICB, DHAC (E32) EJA

BACKGROUND AND STATEMENT OF ISSUES

The Agency for Toxic Substances and Disease Registry (ATSDR) was requested by the Montana Department of Health and Environmental Sciences (MDHES) to evaluate potential public health threats posed by the tetrachloroethene (PCE) groundwater plume located in Bozeman, Montana [1]. The source of contamination identified was the sewer system of the American Stores (formerly Buttries) shopping center located between 15th and 19th Avenues on West Main Street [2].

The original sewer line servicing the shopping center was connected to a septic tank. However, in the 1960's, as a result of sewer backups in the shopping center, use of the septic tank was discontinued and the sewer line was connected to a municipal sewer system. The septic tank was to have been plugged, but it appears that either the tank was not plugged or the plug failed. The connection between the septic tank and the sewer system was not actually severed until the 1990's [3,4].

Vapor extraction was used as an interim measure to treat the contaminated soils associated with the septic tank. No remediation of the soils associated with the sewer line has occurred to date [3].

Most of the residences located above the ground water plume are connected to the municipal water supply. The depth to groundwater in this area ranges from about 20 feet at the source to about 10 feet at the northern edge of the plume [3].

Three families living within the plume boundaries have refused connection to the municipal system for economic reasons; however, they do receive bottled drinking water from a

potentially responsible party. The recent data collected for the site indicates the PCE concentrations in the well water of the residences not connected to municipal water ranged from 17—80 parts PCE per billion parts of well water (17-80 ppb PCE) [5].

The plume continues to migrate north of the source area and is approaching an area of extensive residential and commercial development. Construction of a new highway interchange between Interstate 90 and US Highway 10 is almost complete and is anticipated to cause continued housing and other development in this area. The City of Bozeman has no current plans to provide this area with municipal water. It is not known at this time if the new homes and businesses will be provided sewer service or not [3].

The most recent sampling results (March 1995) indicate that a residential water well along the northern edge of the plume has also been contaminated with PCE at a concentration of 5.3 ppb. The home owner was notified by the MDHES and offered bottled water. The home owner refused [6].

DISCUSSION

PCE is widely used for dry cleaning and degreasing metal. It is also found in many consumer products such as suede protectors, water repellents, silicone lubricants, fabric finishers, spot removers, adhesives, and wood cleaners. PCE gets into the environment primarily by evaporating into the air during use. However, it may also enter the environment as a result of improper handling such as leaking storage facilities or waste sites, or sewer sludge or factory waste disposal. As a result of the wide usage of PCE, it is found in trace quantities in the air we breathe, the water we drink, and the food we eat [7].

In a letter to ATSDR, MDHES relayed several questions concerning potential exposure to contaminants in the plume [1]. The questions and ATSDR's responses to them are as follows:

1. **Do the levels of PCE in the soil-water [groundwater] present a health concern to adults <u>and</u> children consuming garden produce irrigated with PCE contaminated water?**

It is not anticipated that PCE would be present at significant concentrations in garden produce that were irrigated with PCE-contaminated groundwater [8]. The toxicological profile for

PCE states that the values used to determine the ability of an organism to accumulate substances in its tissues (i.e., bioconcentration factors or BCFs) which have been calculated for PCE indicate that it is not likely that PCE will accumulate in the tissues of plants or animals [7]. However, ATSDR suggests that all garden produce be thoroughly washed before it is eaten.

2. Do the levels of PCE volatilizing [from water] to the atmosphere present a health concern to children (i.e., playing in sprinklers)?

To address this question certain assumptions were made about the "average" child who might play in a sprinkler. The exposure calculations assumed that a 20 kg child would play in a sprinkler 1.5 hours per day, for 3 days per week, for 12 weeks per year, for 8 years (age 3-11). Exposure to PCE in sprinkler water was assumed to be via inhalation, dermal absorption and incidental ingestion.

The estimated concentration of PCE in air was assumed to be the same concentration of PCE measured in water. The rate of inhalation was based on a 10 year old child, or 15 cubic meters of air per day (15 m^3/d). For dermal exposure, the permeability constant for water was used as a default value to determine the rate of PCE movement across the skin into the body. The body surface area of a child between the ages of 9 and 12 is 11600 square centimeters (cm^2). It was assumed that the sprinkler water would contact about 75% of the surface area or 8700 cm^2. It was assumed that incidental ingestion would occur at about the same rate that it does when swimming; therefore, an ingestion rate of 0.05 liters per hour (L/hr) was used [9,10].

Many of the above assumptions lead to an overestimation of exposure and provide a worst case estimate. Based on a summation of the exposure to PCE as calculated above (ingestion, inhalation, and dermal absorption) the total amount of PCE that a child would be exposed to as a result of playing in sprinklers spraying contaminated water does not constitute a health concern.

3. Does use of PCE contaminated water for household uses (e.g.; cooking, bathing, washing, etc.) pose a health concern to adults and children?

Maximum Contaminant Levels (MCLs) are standards which define the maximum concentration of a substance that EPA permits in

public drinking water supplies. MCLs are derived using health information (e.g., toxicological data, etc.); however, the final value is influenced by the ability of drinking water systems to achieve the standard (e.g., if the value derived from health studies is below the current detection limit of the analytical method, the final value may be raised to accommodate the analytical method). Long-term exposure to drinking water containing a substance at concentrations above the MCL may lead to adverse health effects.

Long-term use of water contaminated with PCE above the MCL of 5 ppb for drinking, cooking, bathing, washing dishes or clothing, etc. is not recommended. The concentrations of PCE detected in the well water of the three residences without municipal water connection may pose a potential health concern as a result of long-term exposure.

Use of alternate water for drinking purposes helps to reduce exposure to PCE in water; however, studies indicate that exposure to PCE via inhalation and dermal absorption may exceed exposure via ingestion alone due to use of contaminated water in the residence [11, 12, 13, 14]. ATSDR considers it to be prudent public health policy that well water contaminated with PCE at levels of health concern not be used for any in-house purposes (washing, cooking, bathing, etc.) unless measures are taken to reduce the concentration of PCE because of the concerns associated with long-term exposures.

4. Would exposure to PCE contaminated water between quarterly monitoring events present a health concern to adults, children, and infants (under 1 year); particularly at locations that currently are non-detect?

Concentrations found at the northern boundary of the plume are small (1.4—4 ppb PCE). It would not be expected that the well water of homes near the edge of this plume would become contaminated with concentrations of PCE that represent a health concern between quarterly sampling events. The health concerns associated with this contamination problem are long-term health effects. Although the concept of long-term does not have a precise period of time associated with it, it generally is used to describe exposure over years, not months. Therefore, exposure to PCE for 1—3 months, even at or slightly above the MCL, would not be expected to pose a problem to adults, children, or infants. However, once the contamination does reach additional homes at concentrations of concern, alternate water supplies should be provided to address all indoor water uses.

5. **No vapor data has been gathered from basements above the plume. Would exposure to PCE contaminated vapors in the basements of homes present a health concern to adults and children?**

PCE contaminated vapors in basements could pose a health concern if the vapors are present in basements at sufficient quantities. It is difficult to estimate what concentration of PCE would be likely to volatilize into the basement of a home above the plume without having air measurements. However, these measurements have certain difficulties associated with them (e.g., is the source of the PCE the groundwater or some dry cleaning that was just brought to the home, etc.). As a result, the most prudent course of action may be to determine the concentration of PCE found in the soil-gas in the area of highest groundwater concentration near the residences of concern. If the results indicate elevated PCE concentrations in soil-gas near residences, then it may be appropriate to sample basement air in homes.

CONCLUSIONS

1. Assuming that the three remaining residences are connected to municipal water, the public health concern associated with exposure to PCE-contaminated groundwater in homes over the original extent of the plume is minimal.

2. There is a public health concern associated with the continued migration of the plume into new areas and the effect of the contamination on additional homes and businesses which are located outside the area of the municipal water system.

3. No soil-gas data has been made available to ATSDR for review. No air measurements have been made in basements of residences located above the PCE-contaminated groundwater.

RECOMMENDATIONS

1. As additional homes and businesses are impacted by the PCE contamination at levels of health concern, an alternate water source needs to be made available for all indoor purposes (i.e.; not just drinking).

2. Determine the concentration of PCE found in the soil-gas in the area of highest groundwater contamination near the residences of concern. If the results indicate elevated PCE concentrations in soil-gas near residences, then it may be appropriate to sample basement air in homes. ATSDR would be available to review any data to help determine if basement monitoring is warranted.

If further clarification is required or if additional information becomes available, please do not hesitate to contact this office at (303) 391-6919.

Susan L. Muza

Susan L. Muza

Concurrence: Dr. Steven Kinsler, Ph.D.

REFERENCES

1. Letter, To: Ms. Susan L. Muza, ATSDR Region VIII, Denver, Colorado, from Denise Martin, Environmental Specialist, Superfund Program, Date: January 25, 1995.

2. Agency for Toxic Substances and Disease Registry, Health Consultation: Bozeman Solvents Site (809B), June 5, 1992.

3. ATSDR Record of Activity, Bozeman Solvents Site, S. Muza, March 1, 1995.

4. ATSDR Record of Activity, Bozeman Solvents Site, S. Muza, January 24, 1995.

5. Groundwater data from July 1994, August 1994, September 1994, and November 1994 from Denise Martin, MDHES.

6. ATSDR Record of Activity, Bozman Solvents Site, S. Muza, March 27, 1995.

7. Agency for Toxic Substances and Disease Registry (ATSDR) Toxicological Profile for Tetrachloroethene, April 1993. TP92/18. PB/93/182525/AS.

8. ATSDR Record of Activity, Overland Trail, Phoenix, AZ. Steven Kinsler, Ph.D. 9-21-93.

9. ATSDR Public Health Assessment Guidance Manual, March 1992. PB92-147164.

10. ATSDR Record of Activity. Virginia Department of Health--Use of Contaminated Well Water in Swimming Pools. Steve Kinsler, Ph.D., June 11, 1993.

11. Brown, Halinda Szejnwald, Ph.D., Donna R. Bishop, MPH, and Carol A. Rowan, MSPH, 1984. The Role of Skin Absorption as a Route of Exposure for Volatile Organic Compounds (VOCs) in Drinking Water, American Journal of Public Health, vol. 74, no. 5, pp 479-484, May 1984.

12. Andelman, Julian B., Total Exposure to Volatile Organic Compounds in Potable Water. In Significance and Treatment of Volatile Organic Compounds in Water Supplies, N.M. Ram, R.F. Christman, and K.P. Cantor, eds., Lewis Publishers, Chelsea, Michigan, 1990.

13. Schaum, John, Kim Hoag, Russell Kinerson, Jackie Moya, and Rhonda Wang, Preliminary Draft, Estimating Dermal and Inhalation Exposure to Volatile Chemicals in Domestic Water, December 6, 1991. Final Publication to appear as a chapter in Drinking Water Contamination and Health: Integration of Exposure Assessment, Toxicology, and Risk Assessment, R.G.M. want, ed., Marcel Dekker, New York.

14. Giardino, N.J., E. Gumerman, N.A. Esman, J.B. Andelman, C.R. Wilkes, and M.J. Small, July 1990. Pre-print, Real-Time Air Measurements of Trichlorethylene in Domestic Bathrooms using Contaminated Water, Indoor Air '90.

90

County L+C

Facility & # Helena I.P

Closure	Landfarm
Finan Assur	Liner
GW Corr Meas	Methane
GW Monitoring	O & M
GW Reports	Run - On
Inspections	

Other: _____

Crowley, Patrick

From: Crowley, Patrick
Sent: Wednesday, May 16, 2001 2:33 PM
To: LeCours, Catherine
Cc: 'Rosemary Rowe (E-mail)'
Subject: RE: Centennial Park

There is virtually no cover material available on-site. Materials for the Phase III closure were imported from the City storm water detention ponds, "Site E"-- the new Lewis and Clark County Landfill, and, as I remember, the Wal-Mart construction site. The cover on Phase I was likely from Phase II and the cover on Phase II from Phase III. The depth of cover on Phase III was field verified with 14 backhoe test pits dug on May 12, 1993, with Lara Dando of the DEQ on-site.

There have been no field verifications of cover depths on Phases I and II to my knowledge, but there are reports of old refuse surfacing in the soccer fields. One shallow (6"-12" approx.) trench I saw installed to replace a broken sprinkler pipe occasionally encountered old garbage. This would not be unexpected, as the cap was not placed to Subtitle D standards and has not been maintained.

The source of additional cover material is a problem. Any material used would likely have to be transported in at significant cost. Perhaps Randy Lilje of the Helena Parks Department could supply you with information on this subject as he has been doing some research on the matter. As long as there was sufficient depth of cover to hold the applied moisture and grow the grass, almost any material around Helena would do. The surface layer could be amended with compost to provide a suitable artificial topsoil. The City may have a source of compost through their arrangement with Big Butte Bio-Logic, who composts the City's sewage sludge. Again, Randy would know about that.

On December 1, 1988, the City submitted an irrigation plan for the soccer fields in Phase II of the old landfill. Irrigation application was designed to minimize infiltration into the landfill, using a checkbook-type water balance and soil moisture testing. This was a requirement of the closure of Phase II by the DHES. Annual reports on the irrigation were submitted to the Department for 1990 and 1991, but we have had no subsequent reports. (See: Soil Moisture Monitoring Plan, City of Helena Landfill files at DEQ.)

This approach could be applied to the Brownfields proposal also. Since the evapotranspiration rate in Helena exceeds precipitation, the infiltration through the cover could be minimal to none even with sprinkler irrigation of the playing fields during the growing season.

I hope this addresses all of your questions. If not, please contact me.

Pat Crowley
Solid Waste Regulatory Program Manager
Montana Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901
(406)444-5294
(406)444-1374 fax
pcrowley@state.mt.us <mailto:pcrowley@state.mt.us>

-----Original Message-----
From: LeCours, Catherine
Sent: Thursday, May 10, 2001 8:14 AM
To: Crowley, Patrick
Cc: Rosemary Rowe (E-mail)
Subject: Centennial Park

Pat, I know you have already reviewed the Brownfields Assessment report and I appreciate your prompt response. I spoke with Rosemary yesterday and she related some of her questions to me.

One involved the cap over the existing Phase I and II. She is concerned with how much cover may be on-site and if we (you) have any suggestions on what materials may be appropriate to bring in if the fields need more cover material.

She was also concerned with the Phase III area (actually all of the areas) with the increased irrigation water that will be applied once the fields are grassed. Will this additional irrigation 1) compromise the integrity of the cap and 2) is the existing cap (or what you suggest they use over P I and II) sufficient to block any additional infiltration through the landfill which may result in groundwater contamination?

I was hoping that you may be able to address these issues and provide responses to us.

Thanks for your help.

(Rosemary - Did I summarize well enough? Please add to this if necessary!)

Montana Department of
ENVIRONMENTAL QUALITY
Judy H. Martz, Governor
P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.state.mt.us

May 16, 2001

Rosemary Rowe
EPA Region VIII
Montana Office
Interoffice delivery

RE: Targeted Brownfields Assessment Report, Centennial Park

Dear Rosemary:

Thank you for providing the Montana Department of Environmental Quality (DEQ) the opportunity to review the Targeted Brownfields Assessment Report for Centennial Park, Helena, Lewis and Clark County, Montana (TBA). DEQ would like to offer the following comments and suggestions.

Specific Comments:

1. Section 2.0: The bullet list identifies the objectives of the TBA process. Please include specific objectives for this document.

2. Section 3.0: Please refer to the Phase One consistently with either a "1" or "I."

3. Section 3.4:
   a. Fourth paragraph (page 7): Please note in the text that the site was delisted from the Comprehensive Environmental Cleanup and Responsibility Act (CECRA) priorities list in 1996 and referred to DEQ's Community Services Bureau/Permitting and Compliance Division (CSB/PCD) as an active landfill. Please continue to clarify that the Corrective Measures Assessment (CMA) and subsequent corrective measures were conducted under CSB/PCD oversight.
   b. Fifth paragarph (page 8):
      - Please use the acronym "MGP" instead of "MPG" for the Manufactured Gas Plant.
      - Please clarify that the voluntary cleanup performed at the MGP was under the authority of the Remediation Division/Site Response Section (RD/SRS) and that the gasoline release is under the purview of the RD/Petroleum Release Section. Through the work performed with the RD/SRS, additional soil contamination was discovered in the right-of-way for North Main Street requiring further investigation and potential remediation.
   c. Last paragraph (page 8): The report briefly discusses methane gas investigations on Carroll College property. Please expand the discussion to include a summary of sampling, investigation details, and findings.

4. Section 4.1.1, first paragraph: Please include reference to the Montana Numeric Water Quality Standards Circular 7 (WQB-7).

5. Section 4.1.1, fourth bullet: Please provide justification or cite a reference for the potential source of the nitrate+nitrite being the Montana Power Company (MPC) MGP.

6. Section 4.1.3, second paragraph: Please confirm the presence or absence of deed restrictions or institutional controls for the landfill property.

7. Section 4.1.4: Please note the "chlorinated pool water" may be from the pool located at the YMCA for those not familiar with the YMCA facilities.

8. Section 4.2.1: Please expand the discussion of the groundwater extraction system and irrigation pond to include the regulatory authority providing approval and oversight and details of the pond construction (e.g., liner, access, etc.).

9. Section 6.1: DEQ recognizes this is not a detailed Sampling and Analysis Plan; however, the text identifies the analyses recommended for the composite soil samples and the discrete depth soil samples but does not provide such information for the opportunity soil samples, background soil samples, or surface water samples. Please include suggested analytes and methods for all recommended sampling, giving consideration to volatile and semivolatile organic compounds and pentachlorophenol. Railroad ties may also be associated with chromium and pentachlorophenol. These compounds should also be noted.

10. Section 6.1, first bullet: Please identify the depth interval suggested for the composite samples.

11. Section 6.4: Please note DEQ does not use EPA's Region III Risk-Based Concentrations (RBCs) for screening purposes. Please clarify the application of EPA Region IX Preliminary Remediation Goals (PRGs) for direct exposure to residential soils and Soil Screening Levels (SSLs) for migration of contaminants from soil to groundwater. DEQ applies a dilution attenuation factor of 10 to the SSLs in Montana. DEQ also divides the non-carcinogen PRGs by 10 to assure the overall hazard index for the site will not exceed one.

12. General for Figures: The YMCA and Phase I are located on North Main Street. The text refers to North Main Street as a property boundary; however, the figures identify the street as Last Chance Gulch. Please revise the figures to accurately and consistently reflect the street name as North Main Street.

13. Figure 5:
    a. Please define "offsite user." Please clarify if this is a recreational, residential, commercial, indoor, or outdoor receptor. The term "offsite user" may be too broad.
    b. Please include or clarify the presence of the indoor air exposure pathway in this model.
    c. Please include ecological pathways in this model as the text and title of the figure states they are included.

4. Section 4.1.1, first paragraph: Please include reference to the Massachusetts Water Quality Standards Criteria 314 CMR 4.05.

5. Section 4.1.1, fourth bullet: Please provide justification or citing a reference for the potential source of the nitrate-nitrite being the Mormon Well Complex. (MCP) MCP

6. Section 4.2, second paragraph: Please confirm the presence or absence of dust controls or monitoring controls for the landfill property.

7. Section 4.1.4: Please note the "contaminated pond water" may be from the pond located at the YMCA but there not limited to MCP the YMCA facilities.

8. Section 4.2.1: Please expand the discussion of the groundwater extraction system and, as required, to include the frequency, duration, pumping rate, approval and review of the data, existing permit conditions, etc. (e.g., flow, access, etc.).

9. Section 4.1.5: DEQ comments that is not a typical sampling and Analysis Plan (e.g. no QC, no identification of analytical resources, etc.) the comprehensive soil sampling and analysis plan and the plan does not provide such information for the operating soil samples. Further, soil sampling or surface water sampling. Please include appropriate analytical methods for the contaminants of concern, including, e.g. for determination of volatile and semi-volatile organic compounds and pesticides, Kelthane, etc.; and the analytical with chemicals and pesticides/herbicides. These comments should also be incorporated.

10. Section 4.1. first bullet: Please identify the depth intervals to be used for the composite samples.

11. Section 4.1: Please note that DEQ does not use EPA's Region III Risk Based Concentration (RBC) for screening purposes. Please also refer to the approval of EPA Region 1's Preliminary Remediation Goals (PRGs) for direct contact or residential utility and Soil Screening Levels (SSLs) for migration of contaminants from soil to groundwater. DEQ employs a dilution attenuation factor of 10 in the SSL, not 20. DEQ also divides the non-carcinogenic PRGs by 10 to account the overall hazard index for the site, not 1 as used.

12. Figures: The YMCA and Pizzeria are located on North Main Street. The text refers to Main Street as a residential boulevard, however, there appears also to be the closest as a commercial corridor. Please review the figures to accurately and consistently reflect the areas as work, Main Street.

13. Figure 2:

a. Please delete "Utilities, etc." Please identify it as a commercial, residential, commercial/residential or other zoning category. The term "Utilities" may be misleading.

b. Please clearly identify the presence of the Industrial as a zoning designation in the legend.

c. Please include accurate pathways in the model as the text and title of the figure states they are included.

14. Figure 6:
    a. Please provide a legend for the diagram. It is evident the figure is not complete as presented in the TBA report.
    b. Please describe the "Linkage Feature" on the west portion of the site.
    c. DEQ was unable to locate restroom, equipment storage, or concession facilities on the figure. These facilities are not discussed in the text. DEQ suggests that the users of the park facilities will require such infrastructure. Please include or explain the omission.

General Comments:

The following are general comments on the Centennial Park Master Plan as presented and discussed and how the proposed development may impact or be impacted by the existing landfill. DEQ offers the following as potential impacts requiring further investigation without offering specific solutions.

1. The unknown depth and elements of the "cap" on Phase I and II should be quantified through shallow and controlled soil boring activities.

2. Historical landfill areas are prone to extensive subsidence and settlement over time. Such potential must be considered when increasing the "cap" materials and depths, during final grading, and anticipated with maintenance planning.

3. The addition of paved surfaces reduces the potential for surface water infiltration over the area; however, they increase the volume of storm water runoff at localized areas. Collection, control, and off-site disposal of such runoff should be considered as not to impact the "cap" at the point of discharge.

4. Even though rest rooms, maintenance shops, facility storage, concessions, and associated infrastructure were not identified on the Master Plan, impacts from such structures should be considered. For example, the depth and location of water and sewer lines, electric and gas lines, and foundations shall consider the potential for penetration of the "cap" and subsequent release of methane gas through and around the structures.

5. The design and construction of any enclosed structure should consider the potential for methane gas accumulation and the need to remediate such impacts.

6. The size of imported trees should consider root depth and potential impact to the "cap." The species of tree should have shallow root systems or be provided an aboveground planter in which to grow.

7. At present, only a limited portion of the site receives additional irrigation. Please consider the impact of additional surface water infiltration on the integrity of the "cap."

8. Impacts from the construction and installation of bleachers, goal posts, flying disc golf poles, playground equipment, and lighting should be considered. Such structures could penetrate

14. Figure 6:

a. Please provide a legend for the diagram. It is evident the figure is not contiguous as presented in the EPA report.

b. Please describe the "Lakeage Feature" on the west portion of the site.

c. DEQ was unable to locate restroom, equipment storage, or concession facilities on the figure. These facilities are not discussed in the text. DEQ suggests that the users of the park facilities will require such amenities. Please include or explain the omission.

General Comments:

The following are general comments on the Centennial Park Master Plan as presented and discussed and how the proposed development may impact or be impacted by the existing landfill. DEQ offers the following as possible impacts requiring further investigation without offering specific solutions.

1. The unknown depth and elements of the "cap" on Phases I and II should be quantified through sampling and compared with borring and wells.

2. Historical landfill areas are prone to extensive subsidence and settlement over time. Such potential may become critical when increasing the "cap" materials and depths, during final grading, and during and with maintenance plantings.

3. The addition of paved surfaces reduces the potential for surface water infiltration over the area. However, they increase the volume of storm water runoff at localized areas. Collection, control, and off-site disposal of such runoff should be considered as not to impact the "cap" at the point of discharge.

4. Even though real estate, residential units, shops, library, storage, concessions, and associated infrastructure were not identified on the Master Plan, impacts from such structures should be considered. For example, the depth and location of water and sewer lines, electric and gas lines, and foundations shall consider the potential for penetration of the "cap" and subsequent release of methane gas through and around the structures.

5. The design and construction of any enclosed structure should consider the potential for methane gas accumulation and the need to remediate such impacts.

6. The size of large or tall trees should consider root depth and potential impact to the "cap." The species of trees should have shallow root systems or be provided in aboveground planters in which to grow.

7. At present, only a limited portion of the site receives adventitious irrigation. Please consider the impact of additional sections where water infiltration on the integrity of the "cap."

8. Impacts from the construction and installation of benches, goal posts, flying disc golf poles, playground equipment, and lighting should be considered. Such structures could penetrate

the "cap" and either come in contact with waste, provide a location of direct surface water infiltration, or a location of localized methane gas release.

9. If the groundwater under the park is to be used for on-site irrigation, DEQ suggests collecting current contaminant concentration data to evaluate the potential impact of such contaminants on the vegetated surfaces and any humans or animals that may come in contact with the water or irrigated surfaces. Tetrachloroethylene (PCE) is a main contaminant of concern at the Bozeman Solvent Site (BSS). In 1995, the Agency for Toxic Substances and Disease Registry (ATSDR) performed a health consultation in response to specific questions posed by DEQ. Based on average PCE concentrations ranging from 17 to 80 parts per billion (ppb) in the groundwater, ATSDR concluded the following: "…the total amount of PCE that a child would be exposed to as a result of playing in sprinklers spraying contaminated water does not constitute a health concern." A copy of the 1995 Health Consultation is enclosed for your information. DEQ suggests current contaminant concentrations from an on-site irrigation well be provided to ATSDR with a request to perform a similar health consultation for Centennial Park. Another study at the BSS sampled soils irrigated with PCE-contaminated water and did not find detectable levels of PCE in the soils post-irrigation. Again, DEQ suggests a site-specific study be performed for Centennial Park, as appropriate. It is known that PCE does not bioaccumulate in plant tissue. At a minimum, DEQ suggests signage identifying the irrigation water as not from a potable supply.

Please feel free to contact me with any questions or concerns. I can be reached at 406-444-0497 or electronically at clecours@state.mt.us.

Sincerely,

Catherine LeCours
Environmental Specialist

Enclosure: BSS ATSDR 1995

cc (w/o enclosure): Patrick Crowley, DEQ-Permitting and Compliance Division
Aimee Reynolds, DEQ-Remediation Division, Brownfields Coordinator

County Lewis & Clark
Facility & # 90

Closure
Finan Assur
GW Corr Meas
GW Monitoring
GW Reports
Inspections
Other:

Landfarm
Liner
Methane
O & M
Run - On

Montana Department of
ENVIRONMENTAL QUALITY
Marc Racicot, Governor
P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • E-mail: www.deq.state.mt.us

MAILED 10/25/00

October 25, 2000

Bill Michalson
Streets/Solid Waste Superintendent
316 N. Park Ave.
Helena, MT 59623

RE: September 22, 2000 and October 6, 2000 letters -- maintenance of cover, Facility #90

Dear Mr. Michalson:

As I told you on the phone, I asked Pat Plantenberg, one of our reclamation specialists what would be the best treatments for the clay soil conditions of the cap. He said the absolute best "bang for the buck" would be obtained from incorporating organic material, such as compost, into the upper six inches of the cap. He recommended approximately 15 tons per acre. In addition he recommended fertilization with a 16-16-16 or 30-10-5 at a rate of about 150 pounds of fertilizer per acre at the time of seeding.

The seed mix he recommended for the site, with pounds of pure live seed is:

Western wheatgrass	@ 4# per acre
Big bluegrass	@ 0.2# per acre
Green needlegrass	@ 3# per acre
Sheep fescue	@ 1# per acre
Tall fescue	@ 2# per acre
Perennial ryegrass	@ 2# per acre

The areas you and Ken Kapsi discussed must be seeded this fall. The erosion on the north slope also needs attention this fall.

If appropriate provisions can be included in a reclamation agreement with the contractor, it would be permissible to use the eastern portion of the landfill for a construction staging area as long as the integrity of the cap is not breached and proper drainage is maintained. If this is done, any roadway from the transfer station area to the east area must be clearly designated with fencing or posts to keep users from driving all over the cap and must be included in the reclamation agreement. Any reclamation agreement must be submitted to the Department for approval prior to its execution.

If you have any questions or need additional information, please contact me at the Permitting and Compliance Division, Community Services Bureau, Waste Management Section, (406) 444-9879 or e-mail mdasilva@state.mt.us.

Sincerely,

Mike DaSilva
Licensing Program Manager

City of Helena
316 N. Park Avenue
Helena, Montana 59623

RECEIVED
SEP 25 2000
MONTANA
DEPT. OF ENVIRONMENTAL QUALITY
COMMUNITY SERVICES BUREAU

September 22, 2000

Montana Dept. of Environmental Quality
Attn: Mike DeSilva
P.O. Box 200901
Helena, Montana 59620-0901

Dear Mr. DeSilva:

I'm pleased to inform you that funds have been made available to reseed the sparse areas of vegetation on the landfill cap as we discussed in June. Since our conversation, I have met with the Soil Conservation District to request more information regarding seed type, mixture and planting methods. I'll review their recommendations and confer with you on the type of seed prior to planting. Considering the current drought conditions, and the long range forecast calling for a warm dry fall, I don't think its practical to dry land seed this fall. My intention is to review the seed mixture with you and possibly plan to reseed next spring if weather conditions look favorable. Hopefully we won't have another open winter for the fourth consecutive year.

I would like to make you aware that the Montana DOT anticipates letting the North Main reconstruction project in the spring/summer of 2001. A potential does exist for a contractor to request to use a portion of the east end of the landfill for a staging area or storage site for bridge materials during the construction period. My question is, would this be permissible under the current closure to allow a contractor to use this site? Conditions would include preservation of the drainage, the cap, and reseeding the entire area that is disturbed during the course of the project. Should this area be selected as a construction site, and depending on access required, this could delay reseeding of some areas of the landfill.

I would appreciate any response you could give me relating to a storage or staging area as a request could occur shortly after bid opening.

Sincerely,

Bill Michalson

Bill Michalson
Streets/Solid Waste Superintendent

sw\desilva.ltr

City of Helena
316 N. Park Avenue
Helena, Montana 59623

RECEIVED
OCT 16 2000
MONTANA
DEPT. OF ENVIRONMENTAL QUALITY
COMMUNITY SERVICES BUREAU

October 6, 2000

Mr. Mike DaSilva
Montana Dept. Environmental Quality
P.O. Box 200901
Helena, MT 59602-0901

Dear Mr. DaVilva:

Since my meeting with Ken Kapic in May I did request some information from the Soil Conservation District concerning recommending seeding for the landfill cap. In reviewing the Districts' information on soil conditions (clay) and moisture ranges I am requesting that a combination of the following seed mixture be approved.

Western wheat grass	Rosana	20%
Sheep fescue	Cooar	25%
Wheat grass (thickspike)	Critana	10%
Wheat grass (streambank)	Sodar	20%
Wheat grass (bluebunch)	Secur	25%
		100%

After visiting with the Soil Conservation District I feel this seed would be appropriate to match the moisture and soil. An early spring planting is best according to the Districts' dryland pasture information packet. I have included a copy of this information. My intentions are to contract this seeding out in the spring of 2001. The only pending issue would be with the North Main Project and the possible construction storage site for this project.

Sincerely,

Bill Michalson

Bill Michalson
Solid Waste Superintendent

c William Miller, Solid Waste Supervisor

sw\seeding.ltr

Species Selection Criteria for Seeding

Dryland Pastures

in Montana

MONTANA STATE UNIVERSITY
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Extension Service
EB 19
Reprinted April 1993

Species Selection Criteria for Seeding Dryland Pastures in Montana

by Larry Holzworth & John Lacey[1]

Ranching depends upon the management of land, capital and human resources. For it to be economically and ecologically sound, ranchers must adapt to natural factors and develop a well-balanced, seasonal relationship of range, pasture and feed-crop capacities.

Seeding, the process of establishing adapted vegetation for grazing, readily appeals to ranchers and land managers. To ensure a satisfactory return for each dollar invested, seedings must be adapted to the soil and climate, fit the rancher's needs and be properly established and managed. This requires integrating seedings into the total ranch operation.

Experience, observations and recommendations based upon local research should be considered when planning a seeding. A five-step process is described to maximize the effectiveness of seeded pastures: 1) determine seeding objectives, 2) evaluate species criteria, 3) select the proper cultivar, 4) use certified seed, and 5) implement proper management.

Seeding Objectives

The most important step is to identify specific management objectives. For example, the goal may be to reduce spring feeding costs by seeding an improved pasture for early spring forage. A proposed seeding can be evaluated by asking the following questions:

Need for Seeding Pasture

1. Does the site have the potential to grow the kind and amount of forage needed?
2. Will the forage increase productivity?
3. Will the seeding help to balance the year-long forage supply?
4. Will the seeding provide such special uses as a breeding or calving pasture?

---

[1] *Plant Materials Specialist, Soil Conservation Service, and Extension Range Management Specialist, Montana State University, respectively.*

5. Will the seeding allow deferment of native range, alter a season of use, or allow increased stocking rates?
6. How many acres of seeded pasture are needed?
7. Is the area to be seeded ideally located for optimal use?

Profitability of Seeding a Pasture

1. What are the expected benefits?
   a. Will the seeding increase livestock production?
   b. Will the seeding reduce the need for hay and supplements?
   c. Will watershed, wildlife or other resources benefit?

2. What are the expected costs?
   a. What are the establishment (seedbed preparation, seed and seeding) costs?
   b. What is the cost of deferment to allow seeding establishment?
   c. What are the construction and maintenance costs of additional water facilities and fences?
   d. What is the cost of implementing a higher management level to optimize production and lengthen the seeding life?
   e. Will watershed, wildlife, or other resources be adversely affected?

3. Do the expected benefits exceed the expected costs?
   a. Re-examine the seeding objectives if expected costs exceed expected benefits.
   b. Continue planning process if expected benefits exceed costs.

Species Selection Criteria

Several major points should be considered in species selection: 1) intended use, 2) precipitation, 3) soils, 4) seeding establishment, and 5) single or multiple-species seedings, and 6) level of grazing management.

Intended Use

Successful seedings can supply quality forage when supplies normally are inadequate. To ensure the usefulness of a proposed seeding, the monthly demand for forage should be compared to the monthly supply. The demand should include total livestock inventory (brood herd, sires, replacements, offspring and horses). The supply should include native range, seeded pasture, crop aftermath, hay and grain produced for feed. The demand-supply relationship should be evaluated in both short- and long-term plans.

One criterion for selecting species is ability to supply forage when it is needed. Perennials differ in growth periods and in palatability during dormant periods. Introduced species such as Russian wild ryegrass and crested and Siberian wheatgrass are especially well-suited for early grazing because they grow early in

the season (Fig. 1). Altai wild ryegrass also initiates growth early, but its tolerance to early spring grazing is questionable. Pubescent and intermediate wheatgrasses are better suited for summer grazing. Russian and Altai wild ryegrasses usually provide some regrowth for fall grazing and stay palatable for winter grazing. Because Altai grows more upright than Russian wild ryegrass, it is more accessible to animals during winter.

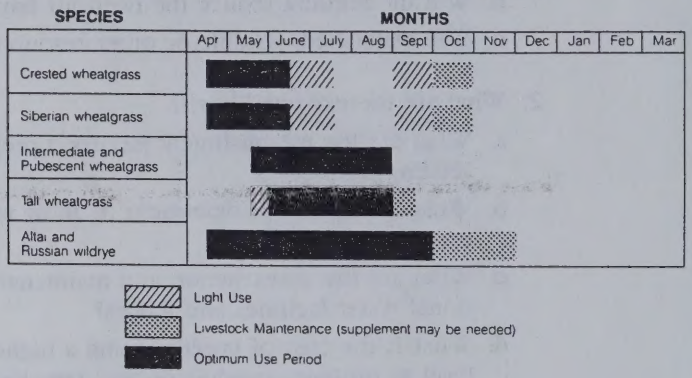

Figure 1. Recommended use periods for introduced dryland pasture species.

Most cool-season native grasses provide forage from late spring to fall (Fig. 2). Use of native range can be deferred when introduced grasses are available for early spring grazing. Introduced grasses are ready for grazing two to three weeks earlier than most native species (Figs. 1 & 2). Range readiness—the earliest date for spring grazing without damaging the vegetation or soil—varies with elevation, soil, annual growing conditions and range condition. It generally is earlier on range at lower elevations, in good condition and when there is a mix of new and old growth.

Another criterion for choosing species to seed is the projected use. Tolerance to grazing varies by species. Crested wheatgrass, one of the most tolerant species, can tolerate 60 to 70 percent use every spring. Recommended levels of use vary by the length of grazing and rest periods, and by season of year. Growing season use of most species should be limited to 45 to 55 percent of current-year growth.

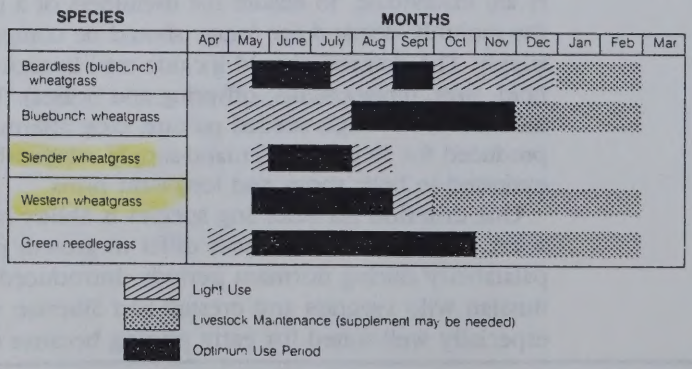

Figure 2. Recommended use period for native pasture species.

Precipitation

Seeded species must be adapted to local climatic conditions. As a rule, herbage yields are lower, establishment is more risky and management is more precarious at lower precipitation levels. Crested wheatgrass and Russian wild ryegrass are the introduced species best adapted to sites receiving less than 12 inches of annual precipitation (Fig. 3). Native species adapted to this lower precipitation zone include bluebunch wheatgrass and Indian ricegrass. Altai wild ryegrass, pubescent wheatgrass and intermediate wheatgrass are well adapted to 13- to 15-inch precipitation sites. Green needlegrass and western wheatgrass are native species recommended for the 13- 15-inch zone. Generally, thickspike wheatgrass is more drought tolerant than western wheatgrass. Brome grasses are best suited to sites that receive at least 16 inches of precipitation. Requirements for other species are summarized in Table 1.

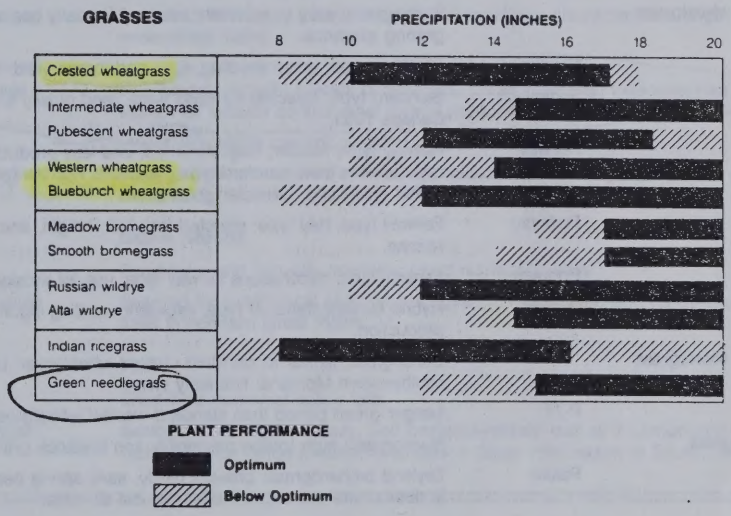

Figure 3. Moisture adaptation of commonly-seeded species.

Dryland Forage Cultivar Adaptation Characteristics

Table 1.

Species Moisture Range 1/	Common Name	Cultivar 2/	Unique Characteristics
Less Than 13 Inches			**Introduced Grasses**
	Russian wildrye		Bunchgrass; difficult to establish; seeding depth critical; needs wide row spacing; poor hay selection.
		Vinall	Average forage production and seed yield; poor seedling vigor.
		Cabree	Canadian release; good seedling vigor—equal to Swift; less productive than Swift.
		Sawki	Similar to Vinall in seed yield and forage production; Canada 1963.
		Mayak	Superior to Sawki in forage and seed yield; Canada 1971.
		Swift	Synthetic Canadian release selected for seed size and seedling vigor; easier to establish than previous cultivars.
		Bozoisky-Select	Synthetic, selected for seed size and seedling vigor; easier to establish and more productive than Vinall.
	Crested wheatgrass		Bunchgrass; easy to establish; adapted for early use, cures poorly; good grazing tolerance.
		Nordan	Standard type, good seedling vigor and forage yield; U.S. 1953.
		Summit	Standard type; selected for seed yield, seed quality and foliage uniformity; Canada 1953.
		Fairway	Fairway type, shorter, finer stemmed, and less productive on eastern plains dryland sites than standard types; exceeds Nordan forage production at higher elevations; Canadian release.
		Parkway	Fairway type, hay type; selected for vigor, height, and leafiness; Canadian release.
		Ephraim	Fairway type, rhizomatous fairway type; use for erosion control.
		Hycrest	Hybrid fairway standard type, excellent seedling vigor; improved forage production.
	Siberian wheatgrass		Bunchgrass; similar to standard crested wheatgrass; best adapted to southwestern Montana; fine leafy stems.
		P-27	Longer green period than standard crested wheatgrass; Idaho release 1958.
	Orchardgrass		Bunchgrass; high forage palatability and livestock preference.
		Paiute	Dryland orchardgrass; drought hardy; early spring pasture; winter hardiness is poor where snow cover does not last all winter.
			Introduced Legumes
	Alfalfa		Excellent legume; root proliferating or creeping types maintain stands longer and are more grazing tolerant than crown types.
		Ladak-65	Crown type; very good cold tolerance; slow cutting recovery; very winter hardy.
		Iroquois	Crown type; good cold tolerance; medium cutting recovery; winter hardy.
		Spredor 2	Root proliferating; good vigor; rapid recovery; very winter hardy.
		Rambler	Creeping root; slow cutting recovery; excellent winter hardiness. Canadian release.
		Roamer	Creeping root; slow cutting recovery; excellent winter hardiness. Canadian release.
		Rangelander	Creeping root; slow cutting recovery; excellent winter hardiness; Canadian release.
		Drylander	Creeping root; slow cutting recovery; more winter hardy than Roamer or Rambler; Canadian release.
		Travois	Root proliferating; rapid recovery; same winter hardiness as Rambler.
			Native Grasses
	Wheatgrass		Widely distributed and common on many sites.
	bluebunch	Secar	Bunchgrass; more drought tolerant than Whitmar; early maturing; persistent.
	streambank	Sodar	More drought tolerant than Critana; dense sod for erosion control.

Table 1. (cont'd)

Species Moisture Range 1/	Common Name	Cultivar 2/	Unique Characteristics
Less Than 13 Inches (cont'd)			**Native Grasses (cont'd)**
Wheatgrass (cont'd)			
	thickspike	Critana	Excellent seedling vigor; forms a tight sod for erosion control; forage type in less than 10 inch rainfall areas.
	slender	Revenue	Bunchgrass, saline tolerant; good forage quality and yield; short lived; quick establishment; Canadian release.
Bluegrass			Bunchgrass; adapted to shallow soils.
	big blue	Sherman	Early spring growth—early as crested wheatgrass; fall regrowth with moisture.
	Canby	Canbar	Closely related to Sandberg bluegrass; understory species for bunchgrass community.
Indian ricegrass			Bunchgrass; adapted to sandy soils; dormant seed requires fall planting.
		Paloma	Selected for stand vigor, forage production; origin southern Colorado; adapted to southeast Montana.
		Nezpar	Less seed dormancy than Paloma; good vegetative characteristics: origin west-central Idaho.
Sheep fescue			
		Covar	Fine-leaved, drought tolerant bunchgrass. Dwarf plant with extensive root system for erosion control; poor forage producer.
Basin wildrye			Moderately saline tolerant; adapted to overflow and upland sites.
		Magnar	Weakly rhizomatous; slow to establish; valuable winter forage: intolerable of overgrazing.
			Native Shrubs
Fourwing saltbush			Excellent winter browse; maintains good nutritional value.
		Wytana	Selected for mechanical seed harvest: used in reclamation and range mixtures in northern Great Plains.
			Forbs
Lewis flax			Short-lived perennial native forb.
		Appar	Selected for its vigor, beauty, and competitiveness; use as a component of reclamation or range mixture; originates in Black Hills region of South Dakota.
13-15 Inches			**Introduced Grasses**
Pubescent wheatgrass			Creeping, sod forming; strongly to slightly dependent on precipitation and soils. Requires 13 or more inches for production and stand longevity: prefers well-drained coarser soils.
		Mandan 759	High forage yield and more persistent than other cultivars; adapted to all Montana, especially the eastern part.
		Luna	Excellent seedling vigor, establishment, and forage production: adapted to most of Montana.
		Greenleaf	Selected for creeping tendency and seedling vigor; superior to Mandan 759; adapted to northern Montana; Canadian release.
			Native Grasses
Beardless wheatgrass			Bunchgrass; long lived; adapted to sites similar to those of bluebunch wheatgrass.
		Whitmar	Good seedling vigor; retains feed value and palatability late into summer; ready for grazing three weeks later than crested wheatgrass.
Western wheatgrass			Sod former; moderately saline tolerant; cured foliage retains good nutrition.
		Rosana	Originates in Rosebud County, Montana; selected for seedling vigor and ease of establishment.
		Rodan	Vigorous, leafy type adapted to same areas as Rosana; similar in forage yield to Rosana.

Table 1. (cont'd)

Species Moisture Range 1/	Common Name	Cultivar 2/	Unique Characteristics
13-15 Inches (cont'd)			**Introduced Grasses**
Western wheatgrass (cont'd)			
		Arriba	Originates in southern Colorado; released for dryland hay, grazing and conservation; adapted to southeast Montana.
		Barton	Intermediate between northern and southern types; strongly rhizomatous, leafy erosion control type.
		Walsh	Long-lived, leafy with good vigor; forage yields similar to Rosana; Canadian release.
	Green needlegrass		Bunchgrass; dormant seed requires dormant fall planting; slow to establish.
		Lodorm	Selected for low seed dormancy; suited for mixtures with western wheatgrass.
	Prairie sandreed		Rhizomatous, warm season perennial; adapted to sandy soil.
		Goshen	Selected for range and conservation uses; good summer forage; good seed production; coarse stemmed; adapted to eastern third of Montana.
			Native Legumes
	Purple prairieclover		Herbaceous perennial legume with taproot; prefers deep soils.
		Kaneb	Selected for use in native mixtures for range improvement and soil stabilization. Fixes nitrogen. Adapted to southeastern Montana.
14-15 Inches			
			Introduced Grasses
	Intermediate wheatgrass		Weak sod former; requires 14 or more inches for productivity and longevity of stands.
		Oahe	Selected for high seed set, forage yield; similar drought tolerance to pubescent wheatgrass; South Dakota release.
		Greenar	Good spring and fall recovery; selected at Puliman, Washington; less drought tolerant than Oahe.
		Amur	Strong seedling vigor, leafy; used at high elevations.
	Smooth bromegrass		Strong sod formers; southern types—good erosin control; northern types—leafy, good in legume/grass mixtures.
		Manchar	Intermediate between weakly spreading northern types and aggressive sod-forming types; good pasture type.
		Lincoln	Aggressive sod-forming type (southern type); good seedling vigor and easy to establish.
	Altai wildrye		Slightly rhizomatous; seedlings slow to establish. Requires 14 or more inches of rainfall, does well on run-in or overflow sites.
		Prairieland	Saline tolerant; deep rooted, retains good nutrition into fall and winter; Canadian release.
15-18 Inches			
			Introduced Grasses
	Meadow bromegrass		Slightly rhizomatous; compatible with legume component.
		Regar	Rapid seed germination; lax basal leaves; good regrowth; excellent hay or pasture.
	Tall wheatgrass		Bunchgrass; saline/sodic tolerant; requires high level of management for production.
		Jose	Leafy; medium tall; less coarse and more palatable than other tall wheatgrasses.
		Alkar	Good seedling vigor; tall; late-maturing, stemmy type.
		Largo	Large, coarse, and deeply rooted; late maturing.
	Timothy		Bunchgrass with a bulblike base. Often used following timber harvest.

Table 1. (cont'd)

Species Moisture 1/ Range	Common Name	2/ Cultivar	Unique Characteristics
15-18 Inches (cont'd)			**Introduced Grasses**
Timothy (cont'd)			
		Climax	Tall; fine stemmed; leafy; regrowth excellent under good fertility; Canadian release.
		Drummond	Later maturing than common; slightly inferior to Climax in mid-summer regrowth; Canadian release.
	Orchardgrass		Bunchgrass, very palatable forage; pasture or hay; easy to establish.
		Latar	Often used following timber harvest or burn; late maturity date corresponds with alfalfa. Excellent irrigated species. Winter hardy where snow cover lasts the entire winter.
			Introduced Legumes
	Sainfoin		Nonbloat; susceptible to crown and root rot; short-lived (three to five years on most sites.)
		Eski	Dryland type released from Montana State University (MSU); short-lived; susceptible to crown rot.
		Melrose	Dryland type; better growth into summer than Eski; Canadian release.
		Nova	Similar to Melrose and Eski; better spring vigor and taller than Melrose and Eski; Canadian release.
	Birdsfoot trefoil		Nonbloat; very slow to establish; adapted to soils with poor internal drainage; yields less than alfalfa.
		Tretana	MSU release; winter survival equals Leo, slow spring/rapid midseason growth; high yield; Canadian release.
		Empire	Semi-erect, fine stemmed; very winter hardy; late maturing; New York release.
		Leo	Earlier maturing like tretana; yield equals Tretana; good Canadian cultivar.
	Cicer milkvetch		More frost and moisture tolerant than alfalfa; nonbloat; cutting recovery slower than alfalfa.
		Lutana	Rhizomatous, decumbent; requires low fertility; forage yield slightly less than alfalfa.
		Monarch	Improved seedling vigor and better stand establishment than Lutana.
			Native Grasses
	Idaho fescue		Bunchgrass common in 15- to 19-inch precipitation zone; prefers well drained soils.
		Nezpurs	Quite variable and shorter than Joseph; equals Durar and exceeds Covar in forage production.
		Joseph	Taller than Nezpurs and more uniform; better forage production than Covar or Durar.

1/ Specific site recommendations should consider local climate, soils, and experiences. Species listed in lower precipitation zones can be grown in higher zones but not vice-versa.

2/ The cultivar list does not contain all available cultivars; it lists the ones most commonly used and recommended.

Soils

Level or gently rolling sites with deep, fertile and medium-textured soils are best for seeding. Clays and sands generally are more difficult to establish stands on. Indian ricegrass and pubescent wheatgrass are well adapted to sandy sites. Western wheatgrass is best adapted to a clayey site. Thickspike wheatgrass grows best on medium- to coarse-textured soils (Fig. 4). Most other species are best-adapted to medium- to fine-textured soils.

Many western soils are saline and/or sodic and require special management, or remedial treatment. Seeding them requires diagnosing the extent and severity of the salt problem and selecting salt-tolerant species for the intended use. Salt-tolerant grasses include tall wheatgrass, Altai wild ryegrass, western wheatgrass and beardless wild ryegrass.

Seeding Establishment

Seeding techniques have much greater impact on seedling establishment than inherent differences between species. Seed should be uniformly distributed into a firm seedbed at one-half inch or less depth. This can be accomplished with a drill that has depth bands, seed agitator and packer wheels. Proper equipment and seeding technique are more critical in areas of low precipitation, and if small, light seeds are being planted. The recommended planting times are early spring, or late fall when temperatures are too cold for seed germination.

Crested wheatgrass is one of the easiest species to establish (Fig. 5). Altai and Russian wild ryegrasses are among the more difficult, and require a longer nonuse period to become established. Seed dormancy, or delayed germination increases the difficulty of establishing Indian ricegrass and green needlegrass. Late fall seeding minimizes seed dormancy.

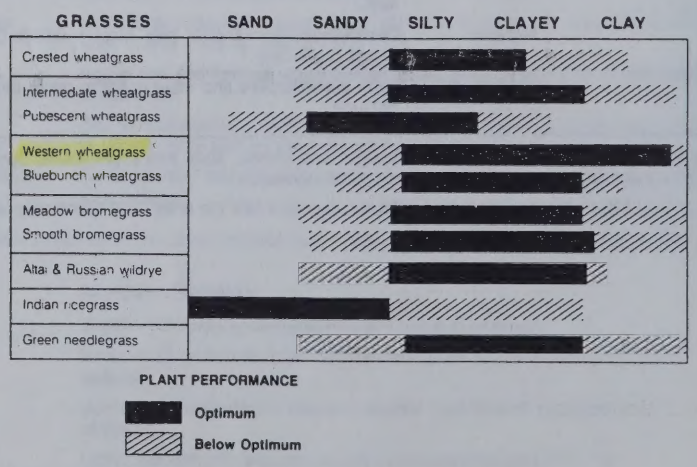

Figure 4. Soil adaptation of species commonly seeded.

Species differ in requirements for moisture, nutrients and light. As a rule, under dryland conditions, wheatgrasses should be seeded in 12- to 14-inch rows, and Russian wildryes in 21- to 24-inch rows. Correct row width allows faster stand establishment and the highest production under dryland conditions. Companion or nurse crops compete with grass seedlings for moisture and nutrients. Nurse crops should not be used in dryland seedings.

Single or Multiple-Species Seedings

The trend in seeding range and perennial pastures has been toward single species or simple mixtures. A single species, or a simple mixture with similar palatability, season of growth, grazing resistance, drought resistance and regrowth rate, reduces management problems. In comparison to a mixture, a single species such as crested wheatgrass, which makes maximum use of available soil moisture during the early part of the growing season, may be a stronger competitor against certain weeds. However, a multiple-seeding that includes grasses and forbs utilizes more of the available nutrients, light and moisture throughout the growing season and is more resistant to other weeds. Good management is critical, otherwise the most palatable species are overgrazed, and the seeding becomes susceptible to weed invasion.

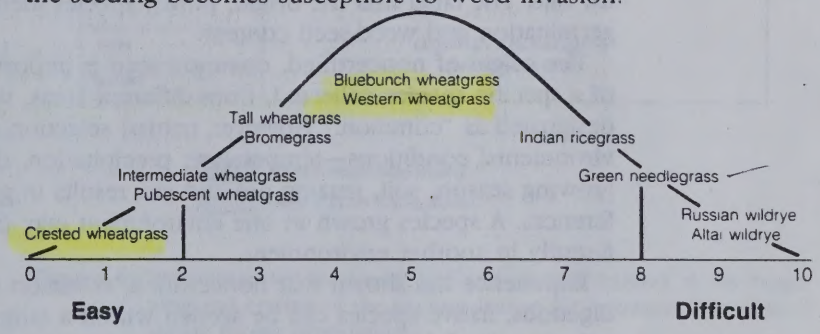

Figure 5. Ease of establishing commonly seeded species.

A grass-legume mixture requires more intensive management of both the forage and livestock. It usually produces more, higher quality forage than a grass seeded alone. The higher yield results because the legume, particularly alfalfa, draws nutrients from deeper depths and produces nitrogen by bacterial fixation. The benefits of alfalfa-grass mixtures generally exceed the risk of livestock loss due to bloat. The potential of bloat is greatly reduced by using sainfoin or birdsfoot trefoil, two nonbloat legumes. Sainfoin can be used in dryland areas. Trefoil grows best in higher rainfall areas.

Cultivar Selection

After selecting the species that is best-suited for the intended use, precipitation, soil, and seeding mixture, an appropriate cultivar should be selected. The Agricultural Experiment Station

(AES) and Soil Conservation Service (SCS) conducts extensive statewide performance and adaptation trials of species and cultivars (cultivated varieties). Only those that perform satisfactorily are recommended by the Extension Service (ES), AES and SCS. Potential benefits of a seeding are highest when proven cultivars are selected and seeded on sites to which they are adapted.

Information on cultivar performance, available from SCS, AES and ES, is summarized in Table 1. In addition, the experience of reputable seed dealers and local farmers and ranchers can be relied upon to assess their value and use in a given area.

Certified Seed

Certified seed should be used. It provides the genetic and mechanical purity and varietal identity needed to establish a uniform seeding, and minimizes the risk of introducing weed seed.

Buyers should beware when a lack of certified seed forces the use of "common" seed of the recommended species.

State and federal laws require dealers to label *all* seed offered for sale. The label lists the origin, purity, species identity, percent germination and weed-seed content.

The origin of noncertified, common seed is important. All seed of a specific species collected, from different areas, would be designated as "common." However, natural selection caused by environmental conditions—temperature, precipitation, day length, growing season, soil, grazing use and etc. results in genetic differences. A species grown in one environment may perform differently in another environment.

Experience has shown that noncertified, common seed of an indigenous, native species can be seeded within a range of 500 miles south of the collection site, or 300 miles in other directions, without serious adaptation problems. East-west movement is influenced primarily by precipitation and elevation.

Seed of proven cultivars, introduced or native species, may be produced in another state. As long as the seed is certified, recommended for the intended use and planted properly it will perform satisfactorily.

Management Influencing Forage Production

Seeding is not a substitute for good range management. Proper grazing management is critical because it directly influences the rate of return from the seeding.

Seedlings must be protected until established. As a general rule, grazing should be deferred until the first seed crop has matured. It may be necessary to extend the nonuse period during dry years. Weed control may be necessary to reduce competition during the first growing season.

The productive life of a seeding is directly related to management. Stubble height can indicate when a single-species seeding is

ready for grazing and when livestock should be removed (Fig. 6). Stubble height is not a reliable indication of grazing periods on native range, because of species diversity and forage selectivity by livestock. Recommended utilization levels vary, depending upon species, season of use, pasture condition and length of grazing and rest periods.

Grazing management must allow plants to grow and reproduce. Recommended practices include: 1) uniform use, 2) correct stocking rate, 3) correct season of use, and 4) the use of a well-designed grazing system.

Seeded pastures should be grazed separately from native range. Fencing makes it possible to utilize the seeded species when most palatable and nutritious. Smaller pastures also make it possible to obtain a more uniform level of use through the concentration of livestock.

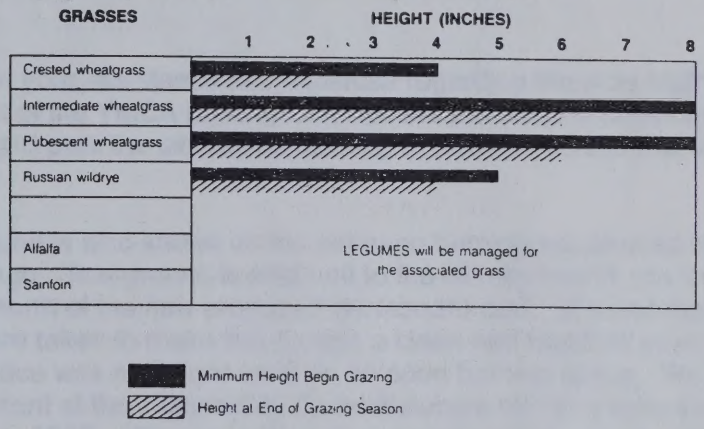

Figure 6. Recommended minimum leaf and stubble heights at the beginning and ending of the grazing season for optimum introduced-specie forage production.

As a general rule, introduced species require higher management levels than native species. They respond better than native species to additional fertilizer and periodic renovation. Introduced seeding longevity is less than for native seedings. Therefore, when comparing introduced and native seedings, the possibility of periodic re-establishment to maintain optimum production should be considered.

RECEIVED
SEP 11 2000
MONTANA
DEPT. OF ENVIRONMENTAL QUALITY
COMMUNITY SERVICES BUREAU

September 8, 2000

F. Patrick Crowley
Environmental Specialist
Community Services Bureau
Department of Environmental Quality
P.O. Box 200901
Helena, MT 59601-0901

Dear Mr. Crowley:

We would like to request your assistance and expertise regarding the area north of the YMCA building and east of the YMCA parking lot. This area is the proposed new location for the skateboard park the city will be building to provide recreational activity for the youth of Helena.

We understand this ground is also known as the old open burning space used by the city a number of years ago. This ground is adjacent to the old city landfill site located several hundred yards north of the new proposed skateboard park. We understand that corrective measures were taken to make this ground a clean and healthful environment by the city when that space was no longer used as an open burning space. We request and invite you to be present at the Helena City Commissioners meeting scheduled for 6:00 p.m., September 11, 2000 . We would like you to be present to provide accurate information and clarification of state regulations regarding this area, if needed.

Thank you very much for your assistance.

Sincerely,

Roy Hudson by ckp

Roy Hudson
Representative

90 County L & C
Facility & # Helena L.F.
Closure
~~Finan Assur~~
GW Corr Meas
GW Monitoring
GW Reports
Inspections
Other:
Landfarm
Liner
Methane
O & M
Run - On

"Please Preserve Memorial Park"

CLOSED CITY OF HELENA
CLASS II LF \ LIC. # 90

County L & C County
Facility & #
Closure
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GW Corr Meas
GW Monitoring
GW Reports
Inspections
Other: General Comes - pondered.

Landfarm
Liner
Methane
O & M
Run - On

City of Helena
316 N. Park Avenue
Helena, Montana 59623

RECEIVED
JUN 27 2000
MONTANA
DEPT. OF ENVIRONMENTAL QUALITY
COMMUNITY SERVICES BUREAU

June 27, 2000

Mr. Rick Thompson
Permitting and Compliance Division
Department of Environmental Quality
1520 East Sixth Avenue
Helena MT 59620

RE: Helena Landfill - Subject of June 30 Meeting

Dear Mr. Thompson:

The main subject to be discussed at the June 30, 2000, meeting pertains to the modification of the clay cap and modification of the slope of the last unit closed in the Helena landfill.

As you know, the city is considering making the old landfill area usable as a city park in the next few years as part of its open space and recreation plan. There is a proposal to place several soccer fields on top of what was the final unit of the city landfill. That is the area between the two railroad tracks and directly east of the present transfer station. The slope of the site results in a ten-foot elevation difference between the north and south sides of the proposed area with the south side being the high end. To level the site, it would take approximately 370,000 cubic yards of imported material. The cost of importing that much material makes the project extremely expensive and may even prohibit moving ahead with that portion of the project.

A proposal has been suggested to temporarily remove the clay cap covering the unit and regrading the landfill to soccer field tolerances and then replacing the cap. Over the cap would be placed approximately one foot of engineered fill and one foot of topsoil upon which grass would be planted.

City of Helena
316 N. Park Avenue
Helena, Montana 59623

June 27, 2000

Mr. Rick Thompson
Permitting and Compliance Division
Department of Environmental Quality
1520 East Sixth Avenue
Helena MT 59620

RE: Helena Landfill - Subject to Issue 20 Modification

Dear Mr. Thompson:

The draft subject to be discussed at the June 30, 2000 meeting pertains to the modification of the plan for the closure of the slope of the last unit closed in the Helena Landfill.

As you know, the city is considering making the old landfill area usable as a city park in the next few years as part of the open space and recreation plan. There is a proposal to place several acres fields on top of what was the final unit of the city landfill. That is the area between the two cultured tracks and directly east of the present transfer station. The slope of the site results in a ten-foot elevation difference between the north and south sides of the proposed area with the north side being the high end. At level the area is quite appealing. Yet, and every yard of imported material. The cost of importing that much material makes the project economically expensive and may even prohibit moving ahead with that portion of the project.

A proposal has been suggested to temporarily remove the clay cap covering the unit and wheelbarrow the landfill to another field recreation and then replacing the cap. Over the cap would go placed approximately one foot of equipment fill and one foot of topsoil upon which grass would be planted.

The city has requested this meeting to discuss the ramifications of such a proposal in terms of cost, landfill closure requirements and any other issues the Department of Environmental Quality might foresee.

We look forward to hearing your views and suggestions at the Friday meeting.

Sincerely,

Randy Lilje

Randy Lilje
Director of Parks and Recreation

c Bob Robinson, Consultant
Tim Burton, City Manager
John Rundquist, Public Works Director

City of Helena
316 N. Park Avenue
Helena, Montana 59623

City Attorney's Office
Tel: (406) 457-8595

RECEIVED
JAN 27 2000
MONTANA
DEPT. OF ENVIRONMENTAL QUALITY
COMMUNITY SERVICES BUREAU

January 24, 2000

Rick Thompson
Waste Management Section Supervisor
Depart. of Environmental Quality
Permitting & Compliance Division
Community Services Bureau
P.O. Box 200901
Helena, MT 59620-0901

RE: Closure of City of Helena Class II Landfill
Deed Notation

Dear Rick:

Enclosed is your copy of the Public Notice of Land Used as a Landfill Facility which was recorded with the Lewis and Clark County Clerk and Recorder on January 21, 2000. The recording information is stamped on Exhibit "B" (page 4). The original document is in the Helena City Clerk's office. The City Attorney's office and the Public Works Department also have copies of the recorded document.

Thank you for your assistance and please let us know if there is anything else we need to do in this regard.

Sincerely,

KIM SELL, Paralegal
City Attorney's Office
KS/ms
Enclosure
c: John Rundquist, Public Works Director
Debbie Havens, City Clerk

KA

County LEWIS & CLARK
Facility & # CITY OF HELENA CLASS II
Closure
Final Assur
GW Corr Meas
GW Monitoring
GW Reports
Inspections
Other:
Landfarm
Liner
Methane
O & M
Run - On

PUBLIC NOTICE OF LAND USED AS A LANDFILL FACILITY

The City of Helena, Montana, a municipal corporation organized and existing under the laws of the State of Montana, hereby notifies the public that a large part of the following described property was used by the City of Helena as a landfill facility and its use is restricted under section 17.50.531(1)(c)(iii), Administrative Rules of Montana (1999) and applicable laws and rules of the State of Montana.

The property previously used as a landfill facility is described as follows:

1. An area consisting of 29 acres, more or less, located in the NE1/4NW1/4 and the NW1/4NE1/4 of Sec. 30, T10N, R3W, more particularly described in the deed between Power and City of Helena, recorded in Book 58 of Deeds, pages 64-65, as shown on Exhibit "A" attached to this Public Notice.

2. Lots 1-17 in Block 65 of Central Addn. #3 to Helena, Lewis & Clark County, Montana.

3. Tract 'A' as shown on Certificate of Survey #411713/C dated 12-15-86, records of Lewis & Clark County, Montana.

4. Tract 'B-3' as shown on Certificate of Survey #599012/B dated 6-15-99, records of Lewis & Clark County, Montana.

5. A parcel located in the NW1/4 of Sec. 30, T10N, R3W, more particularly described on Certificate of Survey #309805, Book 302 of Deeds, pages 774-775, and Exhibit "B" attached to this Public Notice.

6. Tract C-1 as shown on Certificate of Survey #518885/B, records of Lewis and Clark County, Montana.

7. That portion of the BN right of way lying south of the former Northern Pacific Railway Co. mainline in the S1/2SW1/4 and S1/2SW1/4Sw1/4 of Sec. 19, T10N, R3W, and lying between said mainline station 32+31 and 55+75. This tract consists of 362,506 sq.ft. or 8.11 acres.

DATED this 21 day of January, 2000.

CITY OF HELENA, MONTANA

By Troy McGee

TROY McGEE, Acting City Manager

RADIO SERVICE OF IAQU USED AS A LANDING FACILITY

The City of Helena, Montana, a municipal corporation, organized and existing under the laws of the State of Montana, hereby certifies the public Lease part of one of following described property was used by the City of Helena as a landing facility and its use is restricted under section 1.150.201(1)(d)(iii). Administrative Rules of Montana (1987), are applicable laws and rules of the State of Montana.

The property previously used as a landing facility is described as follows:

1. An area consisting of 25 acres, more or less, located in the NW1/4NW1/4 and the SW1/4NE1/4 of Sec. 20, T10N, R3W, more particularly described in the road between Tower and City of Helena, recorded in Book 58 of Deeds, pages 24-43, as shown on exhibit "A" attached to this Public Notice.

2. Tract 1-17 in Block 55 of Central Addn. #1 to Helena, Lewis & Clark County, Montana.

3. Block "V" as shown on Certificate of Survey #1272\C dated 12-18-85, records of Lewis & Clark County, Montana.

4. Tracts "B-3" as shown on Certificate of Survey #2307\B dated 8-18-89, records of Lewis & Clark County, Montana.

5. A parcel located in the NW1/4 of Sec. 30, T10N, R3W, more particularly described on certificate of survey #2288, Book 22 of Deeds, pages 174-176, and Exhibit "A" attached to this Public Notice.

6. Tract C-1 as shown on Certificate of Survey #2128\B records of Lewis and Clark County, Montana.

7. That portion of the 80 right of way lying south of the former Northern Pacific Railway Co. mainline in the S1/2NW1/4 and S1/2SW1/4 of Sec. 18, T10N, R3W, and lying between said mainline station 23+31 and 88+72. This tract contains 2.55,000 sq.ft. or 0.21 acres.

Dated this 16 day of January, 1989.

CITY OF HELENA, MONTANA

By _____
Inter Hodge, Acting City Manager

ATTEST:

By Cathy Jenkins
CATHY JENKINS, Deputy City Clerk

STATE OF MONTANA)
) ss.
COUNTY OF LEWIS AND CLARK)

On this 21st day of January, 2000, before me, the undersigned, a Notary Public for the State of Montana, personally appeared **TROY McGEE and CATHY JENKINS** the Acting City Manager and Deputy City Clerk for the City of Helena, known to me or proved to me to be the persons who executed the foregoing instrument and acknow-ledged to me that they executed the same in such capacities.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal the day and year first above written.

Kimberly Ann Sell
Notary Public for State of Montana
Residing at Helena, Montana
My Commission expires 4/30/03.

KIMBERLY ANN SELL
SEAL
NOTARY
STATE OF MONTANA

All their right title and interest in Twenty nine (29) acres, more or less, in the North east quarter of the North west quarter and the North west quarter of the North east quarter of Section Thirty (30) Township Ten (10) North Range Three (3) West, as described in Deed dated, January 9th 1902, from Lewis and Clark County, by J. F. Wegner, Chairman of the Board of County Commissioners of Lewis and Clarke County, Montana to C. B. Power Filed the 23rd day of January, 1902 and recorded in Book 51 of Deeds at Page 121 of the Records of said Lewis and Clark County, which said Twenty nine (29) acres is more particularly described as follows, to-wit:

All of the N. E. 1/4 of the N. W. 1/4 of Section No. 30, Township 10, North of Range 3 West,, in Lewis and Clark County, Montana, save and except that portion thereof conveyed by William A. Chessman, et ux to the Montana Central Railway Company by Deed dated April 27, 1887, and recorded in Book "9" of Deeds, page 547, records of Lewis and Clark County, Montana; also save and except the Northerly 1/2 of Lyndale Avenue a street 70 feet wide lying along the South boundary of the tract hereby conveyed. Also save and except that portion of Central Addition No. 3 to Helena lying within said N. E. 1/4 of the N W 1/4 of Section 30, Township 10, North of Range 3 West described as follows:- beginning at the S' corner of said N. E. 1/4 of the N. W. 1/4 of Section 30, Township 10, North of Range 3 West and running thence Westerly 344.93 feet along the Southern boundary of said N. E. 1/4 of the N. W. 1/4 of said Section 30; thence Northeasterly along the rear of lots 1 to 17 inclusive in Block 55 of Central Addition No. 3 to Helena; thence across Eighteenth St. and along the rear of Lots Nos. 11 to 16 inclusive in Block 56 Central Addition No. 3 to Helena to the east boundary of said N. E. 1/4 of the N. W. 1/4 of said Section No. 30; thence southerly along the east Boundary of said N. E. 1/4 of the N. W. 1/4 of said Section 30 to the place of beginning;

Also all that portion of the N. W. 1/4 of the N. E. 1/4 of Section 30, Township 10, North of Range 3 West, described as follows:- Beginning at a point of intersection of the West Boundary of said N. W. 1/4 of the N. E. 1/4 of Section 30, Township 10, North of Range 3, West and the line formingrear of Lots 1 to 16 inclusive in Block 56 of the Central Addition No. 3 to Helena, and running thence northeasterly along the line forming the rear of said Lots 1 to 16 inclusive in Block 56 of the Central Addition to Helena across Nineteenth Street and along rear of Lots 1 to 11 inclusive in Block 64 of the Central Addition No. 3 to Helena to the South line of the Montana Central Railway's Company's right of way, as said right of way is described in that certain deed from W. A. Chessman, et ux, to the Montana Central Railway Company, dated April 27th, 1887, and recorded in Book 9 of Deeds, page 547 Lewis and Clark County Records; thence Northwesterly along said south boundary of said Montana Central Railway Company's right of way to the Western boundary of said N. W. 1/4 of the N. E. 1/4 of Section 30, Township 10, North of Range 3 WestThence southerly along said Western boundary of said N. W. 1/4 of the N. E. 1/4 of Section 30, Township 10, north of Range 3 West to the place of beginning, the total area of ground hereby conveyed being 29 acres, more or less.

EXHIBIT "A"

INDEXED

608415
PAULETTE DEHART CLK & REC
LEWIS & CLARK CO
HELENA MT

00 JAN 21 PM 4:32
BOOK M 33 PAGE 0502
BY Shirley McIntosh

24.00

LEGAL DESCRIPTION

A parcel in Section 30, Township 10N, Range 3W, M.P.M. more particularly described as follows:

Beginning at the Northeast corner of Government Lot Number 1 marked by a Granite Stone, thence S. 89°48' West a distance of 246.5 feet more or less to the East right-of-way of the Great Northern Railway, thence Southerly along said right-of-way to the North right-of-way of Lyndale Avenue, thence Westerly along the North right-of-way of Lyndale Avenue to the Southeast corner of Block 2 of the Capital Hill Addition to the City of Helena, thence Westerly continuing along said North right-of-way of Lyndale Avenue a distance of 200 feet, thence Northerly a distance of 220 feet to a point on the South right-of-way of Henry Street, thence Easterly a distance of 200 feet to a point, thence Northerly across the right-of-way of Henry Street a distance of 60 feet to the North right-of-way of Henry Street common with the Southeast corner of Lot 33, Block 3 of the Capital Hill Addition, thence Westerly along the North right-of-way of Henry Street a distance of 50 feet to the Southwest corner of Lot 34, Block 3 of the Capital Hill Addition, thence Northerly along the West line of said Lot 34, Block 3 a distance of 101 feet to the Northwest corner of said Lot 34, thence Easterly along the North line of Lots 34 and 33, Block 3 a distance of 50 feet to the Northeast corner of Lot 33, Block 3 of the Capital Hill Addition, thence Northerly along the East boundary of Lot 32, Block 3 a distance of 101 feet to the Northeast corner of said Lot 32, thence Northerly across the right-of-way of Ralph Street a distance of 30 feet, thence N. 0°41' West a distance of 799.3 feet to the point of beginning.

EXHIBIT "B"

Montana Department of
ENVIRONMENTAL QUALITY

Marc Racicot, Governor

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • E-mail: www.deq.state.mt.us

April 28, 2000

MAILED
4/28/00

Kim Sell, Paralegal
City Attorney's Office
316 North Park Avenue
Helena, MT 59623

Re: City of Helena Class II Landfill (Lic. #90) – Final Closure.

Dear Kim:

Based on the January 27, 2000, submittal of the Public Notice of Land Use, final closure status will be granted to the subject facility. All applicable fees involved with maintaining the solid waste license will be terminated. To officially close the City of Helena Class II Landfill file, the original license must be surrendered. If the original cannot be located, please send a letter stating this.

The potential liability due to adverse environmental impacts remains and is not absolved because the landfill is closed. Post-closure care and maintenance as well as corrective measures must therefore continue at the facility until that the Department gives written approval to discontinue.

If you have any questions or comments, please contact me in writing at the Permitting and Compliance Division, Community Services Bureau, Waste Management Section, by telephone at (406)444-5345, or by e-mail at rithompson@state.mt.us.

Sincerely,

Rick Thompson

Rick Thompson
Waste Management Section Supervisor

MAILED

INITIALS [redacted]T DATE 4-27-00

SOLID WASTE OUTGOING CORRESPONDENCE ROUTE SLIP

	Initial / Date
☐ **NEW APPLICATION**	
Mike D.	
HAC	
Christy	
Rick T.	
Jon D./ Other	
☐ **NEW LICENSE**	Initial / Date
Mike D.	
HAC	
Karen	
Christy	
Rick T. / Other	
☐ **HEALTH OFFICER CARD**	Initial / Date
Mike D.	
Karen	
Christy	
☐ **INSPECTIONS**	Initial / Date
Pat C.	
HAC	
Karen	
Rick T.	
☐ **INTERIM CLOSURES**	Initial / Date
Mike D.	
HAC	
Karen	
Christy	
Rick T./ Other	
☐ **CLOSURES**	Initial / Date
✓ Mike D.	
✓ HAC	HAC 4/27
✓ Karen	
✓ Christy	
✓ Rick T./ ~~Other~~	
☐ **CHANGE IN LICENSE FOR FEE STATUS**	Initial / Date
Mike D.	
HAC	
Christy	
☐ **COMPLAINTS**	Initial / Date
Pat C.	
HAC	
Karen	
☐ **GROUND WATER**	Initial / Date
HAC	
Pat C	
☐ **GENERAL CORRESPONDENCE**	Initial / Date
Pat C./ Mike D.	
HAC	
Rick T.	
Jon D./ Other	
☐ **MISCELLANEOUS**	Initial / Date
FILE	
Path	

City of Helena
316 N. Park Avenue
Helena, Montana 59623

City Attorney's Office
Tel: (406) 457-8595

January 24, 2000

RECEIVED
JAN 27 2000
MONTANA
DEPT. OF ENVIRONMENTAL QUALITY
COMMUNITY SERVICES BUREAU

Rick Thompson
Waste Management Section Supervisor
Depart. of Environmental Quality
Permitting & Compliance Division
Community Services Bureau
P.O. Box 200901
Helena, MT 59620-0901

RE: Closure of City of Helena Class II Landfill
Deed Notation

Dear Rick:

Enclosed is your copy of the Public Notice of Land Used as a Landfill Facility which was recorded with the Lewis and Clark County Clerk and Recorder on January 21, 2000. The recording information is stamped on Exhibit "B" (page 4). The original document is in the Helena City Clerk's office. The City Attorney's office and the Public Works Department also have copies of the recorded document.

Thank you for your assistance and please let us know if there is anything else we need to do in this regard.

Sincerely,

KIM SELL, Paralegal
City Attorney's Office
KS/ms
Enclosure
c: John Rundquist, Public Works Director
Debbie Havens, City Clerk

7/18

County Lewis & Clark Co.
Facility & # City of Helena Class II LF
Closure
Finan Assur
GW Corr Meas
GW Monitoring
GW Reports
Inspections
Other:
Landfarm
Liner
Methane
O & M
Run - On

PUBLIC NOTICE OF LAND USED AS A LANDFILL FACILITY

The City of Helena, Montana, a municipal corporation organized and existing under the laws of the State of Montana, hereby notifies the public that a large part of the following described property was used by the City of Helena as a landfill facility and its use is restricted under section 17.50.531(1)(c)(iii), Administrative Rules of Montana (1999) and applicable laws and rules of the State of Montana.

The property previously used as a landfill facility is described as follows:

1. An area consisting of 29 acres, more or less, located in the NE1/4NW1/4 and the NW1/4NE1/4 of Sec. 30, T10N, R3W, more particularly described in the deed between Power and City of Helena, recorded in Book 58 of Deeds, pages 64-65, as shown on Exhibit "A" attached to this Public Notice.

2. Lots 1-17 in Block 65 of Central Addn. #3 to Helena, Lewis & Clark County, Montana.

3. Tract 'A' as shown on Certificate of Survey #411713/C dated 12-15-86, records of Lewis & Clark County, Montana.

4. Tract 'B-3' as shown on Certificate of Survey #599012/B dated 6-15-99, records of Lewis & Clark County, Montana.

5. A parcel located in the NW1/4 of Sec. 30, T10N, R3W, more particularly described on Certificate of Survey #309805, Book 302 of Deeds, pages 774-775, and Exhibit "B" attached to this Public Notice.

6. Tract C-1 as shown on Certificate of Survey #518885/B, records of Lewis and Clark County, Montana.

7. That portion of the BN right of way lying south of the former Northern Pacific Railway Co. mainline in the S1/2SW1/4 and S1/2SW1/4Sw1/4 of Sec. 19, T10N, R3W, and lying between said mainline station 32+31 and 55+75. This tract consists of 362,506 sq.ft. or 8.11 acres.

DATED this 21 day of January, 2000.

CITY OF HELENA, MONTANA

By Troy McGee

TROY McGEE, Acting City Manager

ATTEST:

By Cathy Jenkins
CATHY JENKINS, Deputy City Clerk

STATE OF MONTANA)
) ss.
COUNTY OF LEWIS AND CLARK)

On this 21st day of January, 2000, before me, the undersigned, a Notary Public for the State of Montana, personally appeared **TROY McGEE and CATHY JENKINS** the Acting City Manager and Deputy City Clerk for the City of Helena, known to me or proved to me to be the persons who executed the foregoing instrument and acknow-ledged to me that they executed the same in such capacities.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal the day and year first above written.

KIMBERLY ANN SILL
NOTARY SEAL
STATE OF MONTANA

Kimberly Ann Sill
Notary Public for State of Montana
Residing at Helena, Montana
My Commission expires 4/30/03.

All their right title and interest in Twenty nine (29) acres, more or less, in the North east quarter of the North west quarter and the North west quarter of the North east quarter of Section Thirty (30) Township Ten (10) North Range Three (3) West, as described in Deed dated, January 9th 1902, from Lewis and Clark County, by J. F. Wegner, Chairman of the Board of County Commissioners of Lewis and Clarke County, Montana to C. B. Power Filed the 23rd day of January, 1902 and recorded in Book 51 of Deeds at Page 121 of the Records of said Lewis and Clark County, which said Twenty nine (29) acres is more particularly described as follows, to-wit:

All of the N. E. 1/4 of the N. W. 1/4 of Section No. 30, Township 10, North of Range 3 West,, in Lewis and Clark County, Montana, save and except that portion thereof conveyed by William A. Chessman, et ux to the Montana Central Railway Company by Deed dated April 27, 1887, and recorded in Book "9" of Deeds, page 547, records of Lewis and Clark County, Montana; also save and except the Northerly 1/2 of Lyndale Avenue a street 70 feet wide lying along the South boundary of the tract hereby conveyed. Also save and except that portion of Central Addition No. 3 to Helena lying within said N. E. 1/4 of the N W 1/4 of Section 30, Township 10, North of Range 3 West described as follows:- Beginning at the S' corner of said N. E. 1/4 of the N. W. 1/4 of Section 30, Township 10, North of Range 3 West and running thence Westerly 344.93 feet along the Southern boundary of said N. E. 1/4 of the N. W. 1/4 of said Section 30; thence Northeasterly along the rear of lots 1 to 17 inclusive in Block 55 of Central Addition No. 3 to Helena; thence across Eighteenth St. and along the rear of Lots Nos. 11 to 16 inclusive in Block 56 Central Addition No. 3 to Helena to the east boundary of said N. E. 1/4 of the N. W. 1/4 of said Section No. 30; thence southerly along the east Boundary of said N. E. 1/4 of the N. W. 1/4 of said Section 30 to the place of beginning;

Also all that portion of the N. W. 1/4 of the N. E. 1/4 of Section 30, Township 10, North of Range 3 West, described as follows:- Beginning at a point of intersection of the West Boundary of said N. W. 1/4 of the N. E. 1/4 of Section 30, Township 10, North of Range 3, West and the line formingrear of Lots 1 to 16 inclusive in Block 56 of the Central Addition No. 3 to Helena, and running thence northeasterly along the line forming the rear of said Lots 1 to 16 inclusive in Block 56 of the Central Addition to Helena across Nineteenth Street and along rear of Lots 1 to 11 inclusive in Block 64 of the Central Addition No. 3 to Helena to the South line of the Montana Central Railway's Company's right of way, as said right of way is described in that certain deed from W. A. Chessman, et ux, to the Montana Central Railway Company, dated April 27th, 1887, and recorded in Book 9 of Deeds, page 547 Lewis and Clark County Records; thence Northwesterly along said south boundary of said Montana Central Railway Company's right of way to the Western boundary of said N. W. 1/4 of the N. E. 1/4 of Section 30, Township 10, North of Range 3 WestThence southerly along said Western boundary of said N. W. 1/4 of the N. E. 1/4 of Section 30, Township 10, north of Range 3 West to the place of beginning, the total area of ground hereby conveyed being 29 acres, more or less.

EXHIBIT "A"

INDEXED

608415
PAULETTE DEHART CLK & REC
LEWIS & CLARK CO
HELENA MT

00 JAN 21 PM 4:32
BOOK M 33 PAGE 0502
BY Shirley McIntosh
24.00

LEGAL DESCRIPTION

A parcel in Section 30, Township 10N, Range 3W, M.P.M. more particularly described as follows:

Beginning at the Northeast corner of Government Lot Number 1 marked by a Granite Stone, thence S. 89°48' West a distance of 246.5 feet more or less to the East right-of-way of the Great Northern Railway, thence Southerly along said right-of-way to the North right-of-way of Lyndale Avenue, thence Westerly along the North right-of-way of Lyndale Avenue to the Southeast corner of Block 2 of the Capital Hill Addition to the City of Helena, thence Westerly continuing along said North right-of-way of Lyndale Avenue a distance of 200 feet, thence Northerly a distance of 220 feet to a point on the South right-of-way of Henry Street, thence Easterly a distance of 200 feet to a point, thence Northerly across the right-of-way of Henry Street a distance of 60 feet to the North right-of-way of Henry Street common with the Southeast corner of Lot 33, Block 3 of the Capital Hill Addition, thence Westerly along the North right-of-way of Henry Street a distance of 50 feet to the Southwest corner of Lot 34, Block 3 of the Capital Hill Addition, thence Northerly along the West line of said Lot 34, Block 3 a distance of 101 feet to the Northwest corner of said Lot 34, thence Easterly along the North line of Lots 34 and 33, Block 3 a distance of 50 feet to the Northeast corner of Lot 33, Block 3 of the Capital Hill Addition, thence Northerly along the East boundary of Lot 32, Block 3 a distance of 101 feet to the Northeast corner of said Lot 32, thence Northerly across the right-of-way of Ralph Street a distance of 30 feet, thence N. 0°41' West a distance of 799.3 feet to the point of beginning.

EXHIBIT "B"

County L+C
Facility & # Helena old #90
Closure
Finan Assur
GW Corr Meas
GW Monitoring
GW Reports
Inspections
Other:

Landfarm
Liner
Methane
O & M
Run - On

CARROLL COLLEGE

September 3, 1999

RECEIVED
SEP 03 1999
MONTANA
DEPT. OF ENVIRONMENTAL QUALITY
COMMUNITY SERVICES BUREAU

Jeffery Towery
Acting Director of Public Works
City of Helena
316 North Park
Helena, MT 59623

Dear Mr. Towery:

A draft copy *Review of Draft Contract Documents and Specifications for Helena Landfill Gas Extraction System, Phase, II Carroll College Area,* dated August 1999 prepared by Hydrometrics, Inc., was made available to Carroll College for review purposes on Monday, August 30th. James Wilbur of JRW Environmental Consulting and I reviewed the document and have the following comments:

- The current design uses two ends of a buried six-inch piping to vent a 1,300-foot long trench. In our view, this design provides insufficient capacity to passively vent the collected landfill gas, and therefore, may require active extraction.

- The specifications call for locating the landfill boundary by excavation at 50-foot intervals. This interval may be too large to accurately determine the landfill boundary adjacent the Grounds Building, and within the fenced Grounds Building parcel. A shorter interval at the location, perhaps 20 feet, would be more appropriate.

- Carroll College recently leveled, graveled, and rolled the Grounds Building parcel at considerable expense. Please modify the construction documents to reflect that the contractor must return the parcel to its current condition once construction is completed.

- The plans show an area of pavement on the roadway that is to be replaced if disturbed. We do not see the need to replace this small isolated section of pavement if it is disturbed.

Thank you for the opportunity to review these plans and specifications. We would like to assist the City in its efforts to ensure that this project is completed in a timely, efficient, and effective manner. If you have any questions, please contact me at 447-5420.

Sincerely,

Sean McGoldrick
Director of Facilities Management

Cc: Matt Quinn, Carroll College
Lynn Etchart, Carroll College
Jody Bingham, Hydrometrics, Inc.
James Wilbur, Environmental Consulting JRW
Frank Crowley, Doney, Crowley, Bloomquist, & Uda, P.C
F. Patrick Crowley, MT Department of Environmental Quality

INITIALS RT DATE 6-1-99

SOLID WASTE OUTGOING CORRESPONDENCE ROUTE SLIP (ONLY)

☐ **NEW APPLICATION** — **Initial / Date**
- Rick T. ____
- Pat C. ____
- Nancy (Proof) ____
- Cathy ____
- Jon D. ____

☐ **NEW LICENSE** — **Initial / Date**
- Rick T. ____
- Pat C. ____
- Nancy (Proof) ____
- Carol ____
- Cathy ____
- Jon D. ____

☐ **HEALTH OFFICER CARD** — **Initial / Date**
- Rick T. ____
- Carol ____
- Cathy ____
- ____ ____

☐ **INSPECTIONS** — **Initial / Date**
- Pat C. ____
- Nancy (Proof) ____
- Carol ____
- Jon D. ____

☐ **INTERIM CLOSURES** — **Initial / Date**
- Rick T. ____
- Pat C. ____
- Nancy (Proof) ____
- Carol ____
- Cathy ____
- Jon D. ____

☐ **CLOSURES** — **Initial / Date**
- ~~Rick T.~~ ____
- ~~Pat C.~~ ____
- ~~Nancy (Proof)~~ CH 6-1
- ✓ Carol CH 6-1
- ✓ Cathy CR 6-7
- ✓ Jon D. JD 6-
- John North [illegible] 6-4

☐ **CHANGE IN LICENSE FOR FEE STATUS** — **Initial / Date**
- Rick T. ____
- Pat C. ____
- Nancy (Proof) ____
- Cathy ____

☐ **COMPLAINTS** — **Initial / Date**
- Pat C. ____
- Nancy (Proof) ____
- Carol (filing & DBase) ____

☐ **GROUND WATER** — **Initial / Date**
- Nancy (Proof) ____
- Pat C ____

☐ **GENERAL CORRESPONDENCE** — **Initial / Date**
- Pat C. / Rick T. ____
- Nancy (Proof) ____
- Jon D. (As Needed) ____
- Mark Steger Smith (As Needed) ____

☐ **MISCELLANEOUS** — **Initial / Date**
- ____ ____
- ____ ____
- ____ ____
- ____ ____

MAILED 6/7/99

☐ **FILE** ____

F:\USR\CB5453\WP\FORMS\ROUTE.SW

DEPARTMENT OF ENVIRONMENTAL QUALITY
PERMITTING & COMPLIANCE DIVISION
Community Services Bureau
Waste Management Section
MARC RACICOT, GOVERNOR

STATE OF MONTANA

Phone: (406)444-5345
Fax: (406)444-1374

Metcalf Building
1520 E Sixth Ave
PO Box 200901
Helena, MT 59620-0901

June 7, 1999

County L+C
Facility & # Helena 90
Closure
Finan Assur
GW Corr Meas
GW Monitoring
GW Reports
Inspections
Other:
Landfarm
Liner
Methane
O & M
Run - On

Mr. David L. Nielsen, City Attorney
City of Helena
316 N. Park
Helena, MT 59624-0002

RE: Closure of the City of Helena Class II Landfill - Deed Notation

Dear Mr. Nielsen:

Based on your April 19, 1999 letter to the Department, interim closure status will be granted for City of Helena Class II Landfill (Lic. #90) from the date of this letter to December 31, 1999. While in interim closure status, the facility's annual license renewal fee will be suspended and the City can proceed with establishing financial assurance for the post-closure care of the facility.

Final closure status will be granted upon the receipt of the deed notation for the facility. Failure to submit a deed notation within the given time frame will result in the rescinding of the interim closure status and the re-establishment of annual license renewal fee.

If you have any questions or comments, please do not hesitate to contact me at the above telephone number or Jon Dilliard, Community Services Bureau Chief at (406) 444-2409.

Sincerely,

Rick Thompson

Rick Thompson
Waste Management Section Supervisor

F:\CB5684\WP\SW\LETTER99\HELENA.599
File: City of Helena Class II\Lic. #90\Lewis & Clark Co. Closure

County Lewis & Clarke Co. 90
Facility & # City of Helena Closed
Closure
Finan Assur
GW Corr Meas
GW Monitoring
GW Reports
Inspections
Other General Correspon-
dence

Landfarm
Liner
Methane
O & M
Run - On

City of Helena
316 N. Park Avenue
Helena, Montana 59623

City Attorney's Office
Tel: (406) 457-8595

April 19, 1999

John North
Chief Legal Counsel
Dept. of Environmental Quality
1520 East Sixth Avenue
P.O. Box 200901
Helena, MT 59620-0901

RE: Closure of Helena Landfill - Deed Notation

Dear John:

Thank you for your assistance in helping the City of Helena comply with the deed notation requirement of ARM 17.50.530(1)(i)(i) through the letter commitment to record the notation as soon as it is legally possible to do so.

The problem we have in complying with the deed notation requirement at this time is that the landfill being closed consists of numerous parcels, some of which do not appear of record in the Clerk & Recorder's office. The Burlington Northern and Sante Fe Railway Company conveyed the eastern part of the abandoned spur line that bisects the landfill to the City. Recognizing the many title problems in this area, we had the entire landfill and other adjacent city-owned tracts surveyed and incorporated into one large tract identified as Tract B-3. The simplest way for us to legally define the landfill parcel is by use of this new tract designation of Tract B-3. Tract B-3 includes all of the closed landfill and additional city-owned land that does not contain landfill. The abandoned eastern spur line that bisects this tract does not contain landfill material.

Since Tract B-3 includes the abandoned spur line recently donated to the City, I cannot file the certificate of survey until the property taxes that constitute a tax lien against the spur line are paid in full. BNSF is not willing to pre-pay these taxes.

John North
April 19, 1999

Until recently, when we were informed that we needed to record a deed notation in order to close the landfill, I was not going to file the new certificate of survey or record the donation deed until after the taxes were paid. Since there is now an urgency in this matter, I propose that until I can file the certificate of survey, which is a prerequisite to recording the deed notation, I agree to record the deed notation as soon as is legally possible. A proposed deed notation is enclosed. In exchange, DEQ would consider this agreement to record as the equivalency of recording and for the purposes of considering the landfill officially closed, the 30 year closure obligation would commence upon receipt of this letter commitment.

If this is acceptable and in accordance with my understanding from our conversation on April 16, 1999, please let me know.

Thanks again.

Sincerely yours,

DAVID L. NIELSEN, City Attorney
DLN/ks
c: Dennis M. Taylor, City Manager
Kim Milburn, Public Works Director

PUBLIC NOTICE OF LAND USED AS A LANDFILL FACILITY

The City of Helena, a municipal corporation organized and existing under the laws of the State of Montana, hereby notifies the public that a large part of the following described property was used by the City of Helena as a landfill facility and its use is restricted under section 17.50.531(1)(c)(iii), Administrative Rules of Montana (1999) and applicable laws and rules of the State of Montana.

The property previously used as a landfill facility is described as follows:

Tract B-3, according to the Certificate of Survey filed under Document No. _____ in the records of the Clerk and Recorder of Lewis and Clark County, Montana.

DATED this _____ day of _____, 1999.

CITY OF HELENA, MONTANA

By_____
DENNIS M. TAYLOR, City Manager

ATTEST:

By_____
DEBBIE HAVENS, City Clerk

STATE OF MONTANA)
) ss.
COUNTY OF LEWIS & CLARK)

On this _____ day of _____, 1999, before me, the undersigned, a Notary Public for the State of Montana, personally appeared **DENNIS M. TAYLOR and DEBBIE HAVENS,** the City Manager and City Clerk for the City of Helena, Montana, known to me or proved to me to be the persons who executed the foregoing instrument and acknowledged to me that they executed the same in such capacities.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal the day and year first above written.

_____
Notary Public for State of Montana
Residing at Helena, Montana
My Commission expires 4/30/99.

SEAL

INITIALS_____ DATE _____

SOLID WASTE PROGRAM ROUTE SLIP

☐ **NEW APPLICATION** — **Initial / Date**
- Rick T. _____
- Pat C. _____
- Nancy (Proof) _____
- Cathy _____
- Jon D. _____

☐ **NEW LICENSE** — **Initial / Date**
- Rick T. _____
- Pat C. _____
- Nancy (Proof) _____
- Carol _____
- Cathy _____
- Jon D. _____

☐ **HEALTH OFFICER CARD** — **Initial / Date**
- Rick T. _____
- Carol _____
- Cathy _____
- _____ _____

☐ **INSPECTIONS** — **Initial / Date**
- Pat C. _____
- Nancy (Proof) _____
- Carol _____
- Jon D. _____

☐ **INTERIM CLOSURES** — **Initial / Date**
- Rick T. _____
- Pat C. _____
- Nancy (Proof) _____
- Carol _____
- Cathy _____
- Jon D. _____

☑ **CLOSURES** — **Initial / Date**
- Rick T. RT 4-9-99
- Pat C. FPC 4/8/99
- ~~Nancy (Proof)~~ DW — DW 4/12/99
- ~~Carol~~
- ~~Cathy~~
- Jon D. JD 4-9

☐ **CHANGE IN LICENSE FOR FEE STATUS** — **Initial / Date**
- Rick T. _____
- Pat C. _____
- Nancy (Proof) _____
- Cathy _____

☐ **COMPLAINTS** — **Initial / Date**
- Pat C. _____
- Nancy (Proof) _____
- Carol (filing & DBase) _____

☐ **GENERAL CORRESPONDENCE** — **Initial / Date**
- Pat C. / Rick T. _____
- Nancy (Proof) _____
- Jon D. (As Needed) _____

☐ **MISCELLANEOUS** — **Initial / Date**
- _____ _____
- _____ _____
- _____ _____
- _____ _____

F:\USR\CB5453\WP\FORMS\ROUTE.SW

MAILED
4/12/99 DW

DEPARTMENT OF ENVIRONMENTAL QUALITY

PERMITTING & COMPLIANCE DIVISION
Community Services Bureau
Waste Management Section
MARC RACICOT, GOVERNOR

STATE OF MONTANA

Phone: (406) 444-4400
Fax: (406) 444-1374

Metcalf Building
1520 E Sixth Ave
PO Box 200901
Helena, MT 59620-0901

April 8, 1999

County L & C
Facility & # Helena 90
Closure
Finan Assur
GW Corr Meas
GW Monitoring
GW Reports
Inspections
Other:
Landfarm
Liner
Methane
O & M
Run - On

Kim Milburn
Public Works Director
City of Helena
316 North Park Avenue
Helena, MT 59623

Dear Kim:

Thank you for discussing the Great Northern wastes after the City Council work session on the 24th of February, 1999. You made several significant points relevant to this waste pile and the closure status of the landfill. We have discussed these points at the Department and have come to the following conclusions:

1.) The wastes from the Great Northern area can be considered a "waste pile" meeting the definition of ARM 17.15. 503(54), if they are being stored for later use as sub grade material.
2.) The length of storage and end use must be defined in a work plan for the park and must be presented to the Department. Normally, waste piles are moved within one year.
3.) Failure to beneficially use this pile in the time frame specified in the plan may cause the Department to reconsider the classification of the material, as it may be a disposal rather than a temporary storage of material.
4.) Weed suppression and run off control are also required to prevent the piles from becoming a nuisance or a pollution source.
5.) If this material is used as sub grade fill, it would have to be covered by either 2 feet of earthen material, or asphalt or concrete.
6.) The presence of this waste pile would not affect the closure status of the old landfill.
7.) The closure inspection was completed on December 10, 1998, as I stated in my letter of February 4, 1999, with the waste pile issue needing a solution.
8.) I do not have a copy of the deed notation required by ARM 17.50.530(1)(i)(i). If you need sample wording for the deed notation, please contact me. If the notation has been placed in the public records as required, the Department would consider the closure final as of the December inspection. Otherwise, once the deed notation is filed, the 30 year post closure care clock starts.

I think we are quite close to a resolution of this issue. A review of your letter of October 26, 1998 indicates that the City and the Department are perhaps saying the same things, using different terms, now that we fully understand the City's intentions. I hope this will lead to a prompt resolution of this matter. If I can be of further help, please feel free to contact me. My direct phone line is 406-444-5294.

Sincerely,

Pat

F. Patrick Crowley
Solid Waste Regulatory Program Manager

cc: Dennis Taylor, City Manager
Ed Thamke, Enforcement Division

File: City Of Helena Landfill Closure
Path: G:/CSB/SWS/closure and waste pile.doc

County Lewis & Clark
Facility & # Helena 90
Closure
Finan Assur
GW Corr Meas
GW Monitoring
GW Reports
Inspections
Other:
Landfarm
Liner
Methane
O & M
Run - On

Hydrometrics, Inc.
consulting scientists, engineers & contractors

September 30, 1998

Pat c
RECEIVED
OCT 01 1998
MONTANA
DEPT. OF ENVIRONMENTAL QUALITY
COMMUNITY SERVICES BUREAU

Kim Milburn
Public Works Director
City of Helena
316 North Park Ave.
Helena, MT 59623

RE: Minutes of 9/22/98 City of Helena Landfill Methane and Groundwater Remediation Meeting

Dear Kim:

This letter is to transmit the minutes of the September 22, 1998 meeting between the City of Helena and the Montana Department of Environmental Quality (MDEQ) in regards to the City of Helena landfill methane and groundwater remediation.

Attending: Kim Milburn, City of Helena
Ted Hill, City of Helena
Pat Potts, MDEQ
Pat Crowley, MDEQ
Ken Kapsi, MDEQ
Mike Wignot, Hydrometrics, Inc.
Jodi Bingham, Hydrometrics, Inc.

Existing YMCA Gas Extraction System

- Jodi Bingham gave an update of the existing YMCA gas extraction system.
  - Hydrometrics is currently increasing flows in gas extraction wells EW-2, EW-3 and EW-4 to try to further reduce methane concentrations in monitoring probes HL-9, HL-10 and HL-18.
  - A second carbon canister for off-gas treatment to eliminate possibility of discharge after breakthrough in first canister is scheduled for next week. (Installed September 28, 1998.)
- Pat Crowley considers HL-9, HL-10 and HL-18 compliance wells as the YMCA building area was never permitted with the landfill. Pat will send information showing the permitted boundary to Ted Hill for his files.
- Jodi Bingham will prepare a map with all extraction wells, monitoring probes, groundwater sampling wells, etc. She will send a copy to Pat Crowley with October monthly report.

Proposed Carroll College Gas Extraction System

- Jodi Bingham gave an update on the proposed Carroll College gas extraction system.
  - Methane probes along west boundary are being monitored monthly.
  - Hydrometrics presented six alternatives to the City in April and are waiting for Carroll College and the City to work out the property boundary issues before continuing design phase.
- Kim Milburn indicated that the City has been working with Carroll College to try to resolve their differences. In a meeting with Lynn Etchart and Tom McCarvel, a verbal agreement was reached in which the City would regain all the landfilled property (new facility boundary would extend 30 feet west of existing garbage). He will get back in touch with them this week about finalizing the deal.
- Once this issue has been resolved, the design phase can continue.
  - Ted Hill said that their budget for this fiscal year includes the Carroll College gas extraction system.
  - A passive trench and piping with the capability for a future retrofit with a blower, should the need arise, was agreed upon by the City and Pat Crowley as the best option.
  - The City has the option to repermit the landfill to include the Carroll College property; however, reopening the permit is a lot of work and isn't necessary according to Pat Crowley. Pat recommended that the trench be installed and the monitoring probes on the west side of the trench be used as the compliance points, even though they are technically beyond the permitted property boundary.

Groundwater Remediation

- With the YMCA gas extraction system installed and the Carroll College gas extraction system in the works, groundwater remediation is the remaining concern.
- Pat Crowley presented a draft letter stating that with the current gas quality at the YMCA gas extraction system, a global gas extraction system would not improve groundwater quality and another corrective measure should be selected. Pat also noted that a gas sample collected from the Carroll College side may yield different results that could support the use of a global gas extraction system for groundwater remediation.
- Compliance wells MPC-1 and HL-90-1 still exceed the MCL's for perchloroethene (PCE).
- Pat Potts stated that concentrations of PCE in I-4 have been increasing and other wells that have previously been clean now have detectable concentrations. It is her opinion that the plume is spreading.
- The City was given two years to monitor the existing gas extraction system to evaluate the affects on groundwater quality. However, Pat Crowley had previously stated that because the system was not global, the two-year monitoring period did not apply here.

- Alternatives for groundwater remediation included seasonal irrigation and air sparging.
  - Pat Potts suggested the City (Hydrometrics) began modeling the groundwater and investigating the irrigation alternative.
  - The state has GMS (version of Modflow) and would like the input files to double check Hydrometrics' modeling results.
  - Pat Crowley stated that MDEQ was not likely to consider natural attenuation as a remediation alternative.

Schedule

- For compliance of YMCA gas extraction wells (bringing monitoring probes into compliance), Pat Potts thought the two-year period already agreed to was sufficient.
- For the Carroll College gas extraction system, the property issues should be settled and an alternative selected by the end of October with design and construction to be completed by next summer.
- For the groundwater remediation, the groundwater modeling for irrigation well installation and further investigation of the air sparging alternative should be completed by the end of October.
- Another meeting similar to this one was tentatively scheduled for the week of October 26th to discuss the progress on the Carroll College gas extraction system and to present the results of the groundwater modeling.

If you have any questions or comments concerning this summary, please feel free to call me.

Sincerely,

Jodi Bingham, E.I.
Environmental Engineer/Chemist

c: Ted Hill, City of Helena
Pat Potts, MDEQ
Pat Crowley, MDEQ
Ken Kapsi, MDEQ
Mike Wignot, Hydrometrics

Additional waste
placed at
landfill from

Great Northern Project.
Inspected briefly
6/20/98
J.P. Cowly.

Landfill Closure file
City of Helena L.F.

City of Helena
316 N. Park Avenue
Helena, Montana 59623

RECEIVED
JUN 22 1998
MONTANA
DEPT. OF ENVIRONMENTAL QUALITY
COMMUNITY SERVICES BUREAU

June 18, 1998

Pat Crowley
Department of Environmental Quality
1520 East Sixth Avenue
P.O. Box 200901
Helena, Montana 59620-0901

RE: Helena Landfill Closure

Dear Mr. Crowley:

Attached is a memo from Doug Krebs that details the final closure cover completion for the Helena landfill. As Doug mentions the information regarding the final cap is on file in the City Engineering office.

I hereby certify that the cap was placed in compliance with applicable state and federal regulations in effect at the time of closure, as directed by state DEQ staff.

If you wish to review our records or have any questions please call Doug Krebs at 447-8431.

Sincerely,

Charles R. Hanson

Charles R. Hanson
City Engineer

c: Kim Milburn, Public Works Director
Dennis Taylor, City Manager

County: Lewis + Clark
Facility & #: Helena 90
Closure 1994-
Finan Assur
GW Corr Meas
GW Monitoring
GW Reports
Inspections
Other:
Landfarm
Liner
Methane
O & M
Run - On
2-7

MEMORANDUM

MAY 28, 1998

TO: CHUCK HANSON, CITY ENGINEER

FROM: DOUG KREBS, ENGINEERING MANAGER DK

SUBJECT: CITY OF HELENA FINAL LANDFILL CLOSURE PLAN

Hydrometrics, Inc. submitted the Helena Landfill Closure Plan to the Montana Department of Health and Environmental Sciences in September 1991. Hydrometrics, Inc. designed the Closure Plan to meet all requirements set forth by the State of Montana in the Administrative Rules of Montana, Title 16, Chapter 14-Solid Waste Management, Sub-chapter 5-Refuse Disposal; and Sub-chapter 7-Proposed Groundwater Monitoring Rules for Landfills in Montana.

The engineer designed the final cover for the City of Helena Landfill according to the State of Montana Class II Landfill Closure Requirements and Recommendations (April 3, 1991). Proposed future land use, maintenance and monitoring have all been considered in the final cover design.

In July 1993 city staff staked the elevation of the existing garbage as base line for the final cover. October 1993 the staff staked the top and crossed sectioned clay cover. As part of DEQ spring 1994 inspection, staff performed a total station survey of landfill including the staking of the area requiring additional cover. **Maronick Construction completed the final cover elevations corrections resulting from DEQ's spring of 1994 on site inspection in October 1995.** The site plan, field notes and chronological sequence of the engineering staff involvement are on file in the engineering office.

County Lewis & Clark
Facility & # Helena 90

Closure	Landfarm
Fnan Assur	Liner
GW Corr Meas	Methane
GW Monitoring	O & M
GW Reports	Run - On
Inspections	

Other:

2-5

Helena L.F.

DEPARTMENT OF ENVIRONMENTAL QUALITY
ENFORCEMENT DIVISION

Closure file

Metcalf Building
1520 East Sixth Ave.

Complaint file

MARC RACICOT, GOVERNOR

STATE OF MONTANA

Phone: (406)444-0379
Fax: (406)444-1923

PO Box 200901
Helena, MT 59620-0901

July 6, 1998

Kim Milburn, Director of Public Works
City of Helena
316 N. Park Avenue
Helena, Montana 59623

RE: Great Northern Project Excavation Solid Waste Complaint (CVID#2132).

Dear Mr. Milburn:

The Montana Department of Environmental Quality (DEQ) has received a complaint regarding the placement of debris excavated from the Great Northern development project at the City of Helena Solid Waste Management System. Specifically, the complaint is that the material is solid waste being placed inappropriately as clean fill.

After numerous attempts to communicate with each other via the telephone, you and I were finally able to discuss this matter during a June 17 Helena Brewers baseball game. At that time you told me that you thought there was ~200 cubic yards of soil that had been placed in the yard waste and tire collection area of the old landfill/transfer station. You also gave me and/or members of my staff permission to further investigate the complaint by visiting and sampling the site. After reviewing the environmental site assessments performed for the Great Northern Site by EnviroCon & Douglass, I determined that there was very little potential for hydrocarbon, organic or inorganic contamination to be present in the excavated material. However, a site visit determined that there is ash, treated wood and scrap metal mixed in with rock and dirt. There is also considerably more than 200 cubic yards of debris at the site.

"Clean Fill" as defined under Administrative Rules of Montana (ARM) 17.50.502(6) means soil, dirt, sand, gravel, rocks and re-bar free concrete emplaced free of charge to the person placing the fill, in order to adjust or create topographic irregularities for agricultural or construction purposes. Unfortunately, the material being placed on the City's property does not meet the criteria for clean fill and, in actuality, is considered to be solid waste disposal. This has possible severe implications for the City of Helena that may impact final closure of the old Class II landfill.

This complaint is being referred to Pat Crowley of the DEQ's Solid Waste Program for resolution. I urge that you work with Pat to remove the waste material at your earliest opportunity. The department will do what we can to work out the most feasible option to get the City of Helena into compliance. Should any questions arise in the future as to regulatory requirements for the City of Helena Public Works Department, please do not hesitate to call me at 444-2964, or at the letterhead address on this document.

Sincerely,

Edward A. Thamke
Complaint Management Section Chief

c: Pat Crowley, DEQ-Solid Waste Program
Alan Nicholson, Inc., Power Block, 7 West 6th Avenue, Helena, MT 59601

County L&C
Facility & # Helena 90
Closure 1999
~~Finan Assur~~
GW Corr Meas
GW Monitoring
GW Reports
Inspections
Other:
Landfarm
Liner
Methane
O & M
Run - On

City of Helena
316 N. Park Avenue
Helena, Montana 59623

RECEIVED
OCT 28 1998
MONTANA
DEPT. OF ENVIRONMENTAL QUALITY
COMMUNITY SERVICES BUREAU

October 26, 1998

Mr. Pat Crowley
Department of Environmental Quality
Permitting and Compliance Division
Community Services Division
P.O. Box 200901
Helena, Montana 59620

Dear Pat:

This is in reference to our June 18, 1998 letter regarding our request for final closure of the Helena landfill and subsequent August 10, 1998 correspondence regarding additional material placed over the old Cell 2.

Pursuant to the second correspondence and in concert with the proposal therein, Nicholson, Inc., proceeded to hand pick the surface clean of wood, metal and non-conforming debris. This activity is now complete and inspected by city staff. The area is ready for final contouring and placement of cap and sod per the Centennial Park development plan currently under design. The Centennial Park development plans are under development of Carl Thulsen, ASA and Damschen Associates under contract to Randy Lilje, City Parks Director.

We would like to immediately proceed to final closure of the city landfill in accordance with our June 18, 1998 request. To our knowledge all other conditions for closure have been previously satisfied and closure is warranted.

Thank you for your consideration and assistance in this regard.

Sincerely,

Kim C. Milburn, P.E.
Public Works Director

c: Edward Thamke, DEQ
Alan Nicholson, Nicholson, Inc.
Dennis Taylor, City Manager
David Nielsen, City Attorney
Randy Lilje, Parks Director
Ted Hill, Environmental Engineer
Chuck Hanson, City Engineer
Doug Krebs, Engineering Dept.
Shelly Laine, Administrator Director
Jodi Bingham, Hydrometrics

City of Helena
316 N. Park Avenue
Helena, Montana 59623

Helena L.F. Complaint. #3

RECEIVED
AUG 11 1998
MONTANA
DEPT. OF ENVIRONMENTAL QUALITY
COMMUNITY SERVICES BUREAU

August 10, 1998

Department of Environmental Quality
ATTN: EDWARD THAMKE
P.O. Box 200919
Helena, Montana 59620-0901

RE: GREAT NORTHERN PROJECT EXCAVATION - SOLID WASTE COMPLAINT (CVID #2132)

Dear Mr. Thamke:

It was good to speak with you and Pat Crowley on Tuesday, August 4th regarding this subject. This letter is in response to your letter of July 6, 1998 and our conversation.

I concur that the debris excavated from the Great Northern development project and deposited over the old City landfill (Cell 2) does contain "ash, treated wood and scrap metal mixed in with rock and dirt" as you noted. I did know ahead of time that the ash was present in the material and believe, as you noted also, that the ash presented "very little potential for hydrocarbon, organic or inorganic contamination" in the mix. However, I was unaware of the treated wood and scrap metal present and understand that these materials could be deemed unacceptable as fill material.

As you are aware, the City accepted this material as fill in order to assist the development of Centennial Park (see attached diagram) in proceeding quickly and at minimal expense. Additionally, we were desirous of keeping Great Northern material out of the county landfill regardless of whose expense it was. However, its never been our desire or intent to circumvent regulatory requirements and it was to our consternation that this material from Great Northern proved to be a problem.

Therefore, in order to rectify this situation and provide an engineered solution that is an overall improvement to the pre-existing situation at the landfill I propose the following:

> **The existing material from the Great Northern area be immediately hand picked of wood and metal to provide a reasonably safe surface for pedestrian use. Upon approval of the Centennial Park plans, the area be surveyed and staked for final grade. At that time the Great Northern material will be placed to final contour and a suitable landfill cap (i.e. 18" of impermeable material) placed over what had been in place previously. The area will then be ready for placement of sod and improvements in accordance with the Centennial Park plan. All of this, of course is subject to State and local approvals.**

I really appreciate your thoughts and recommendations to work out the most feasible option to get the City of Helena into compliance. If this proposal, or variation thereof, is acceptable I will proceed expeditiously to initiate the process. Mr. Nicholson (Nicholson, Inc.) has already agreed to clean the existing surface of the material as stated. With everyone's assistance we should be able to reach a viable solution that works for everyone and is a win-win for our community.

Sincerely,

KIM MILBURN, P.E.
PUBLIC WORKS DIRECTOR

c: Pat Crowley, DEQ Solid Waste Program
Alan Nicholson, Nicholson, Inc.
Dennis Taylor, City Manager
David Nielsen, City Attorney
Ted Hill, Solid Waste
Randy Lilje, Parks Director

KM/lk

Therefore, in order to resolve this issue, we and provide an engineered solution that is an overall improvement to the pre-existing situation at the landfill I propose the following:

> The existing material from the Great Northern area be immediately hauled off-site of wood and metal to provide a reasonably safe surface for pedestrian use. Upon approval of the conceptual final plans, the area be surveyed and staked for final grade. In these, the Great Northern material will be placed to final contour and a suitable landfill cap (i.e. 12" of impermeable material) placed over what had been in place previously. The area will then be ready for placement of sod and improvements in accordance with the Centennial Park plan. All of this, of course is subject to State and local approvals.

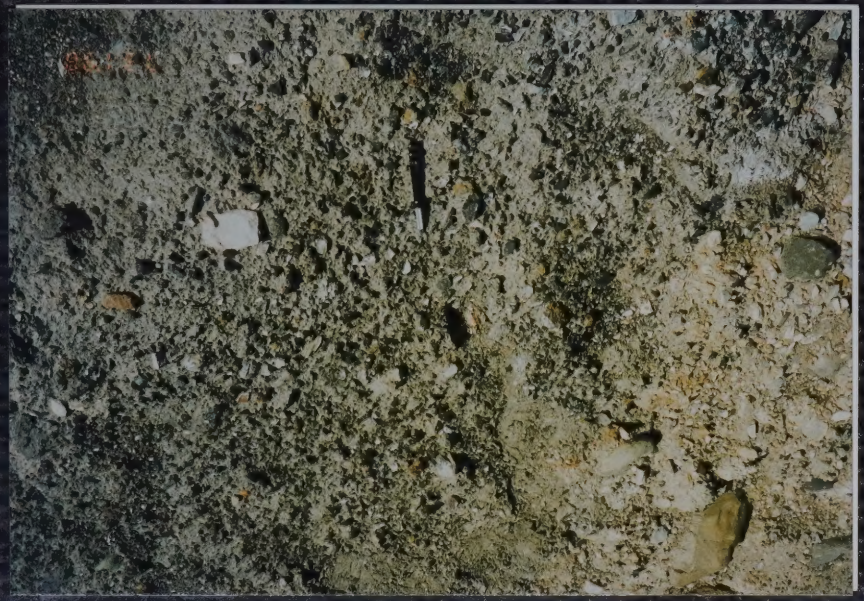
I really appreciate your thoughts and recommendations to work out the best possible solution to get the City of Fidalgo into compliance. If this proposal, or variation thereof, is acceptable I will provide expeditiously to initiate the process. Mr. Nicholson (Nicholson, Inc.) has already agreed to clean the existing surface of the material as stated. With everyone's assistance we should be able to reach a viable solution that works for everyone and is a win-win for our community.

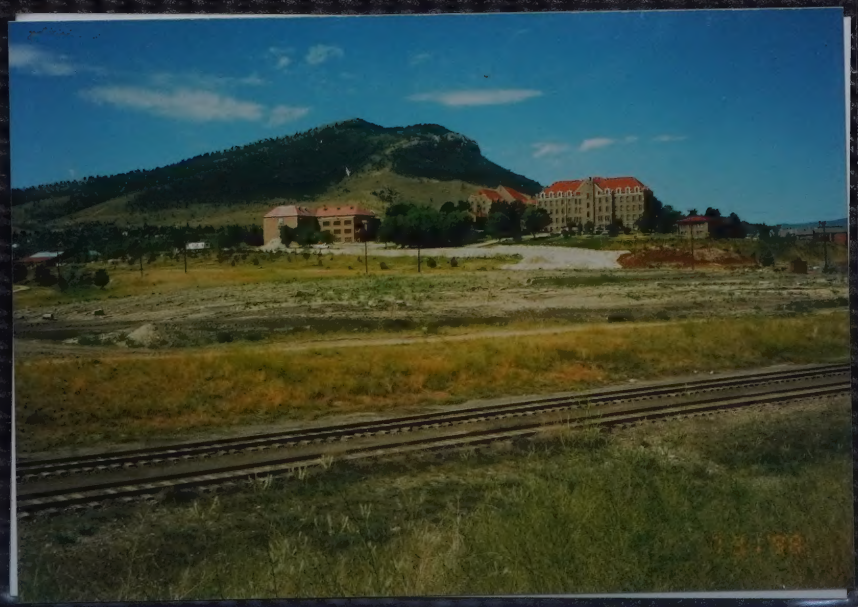
Sincerely,

JOHN MILBURN, P.E.
PUBLIC WORKS DIRECTOR

c: Pat Crowley, DEQ Solid Waste Program
Alan Nicholson, Nicholson, Inc.
Dennis Taylor, City Manager
David Nielsen, City Attorney
Ted Hill, Solid Waste
Randy Lille, Parks Director

RJN/kk





Helena I.F.
Final Cover - no veg.
Looking North
J P Crowley
7/31/98

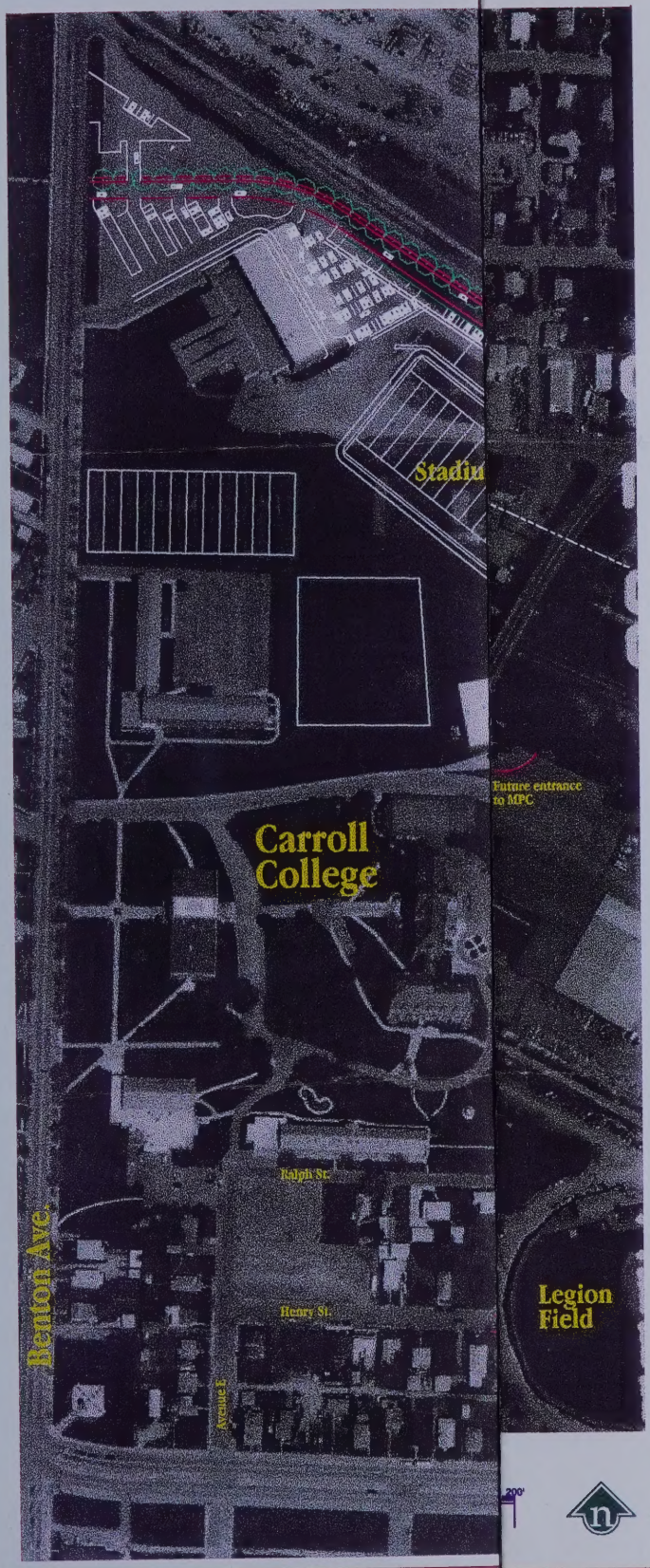
City-County Build[illegible]
Room 428
316 North Park Avenue
Helena, MT 59623

(406) 447-8463

City of Helena

Randy Lilje
Director of Parks & Recreation

P Crowley
comments.



MONTANA LICENSED LANDSCAPE ARCHITECT
CARL A. THUESEN NO. 5

Centennial Park Master Plan
Master Plan

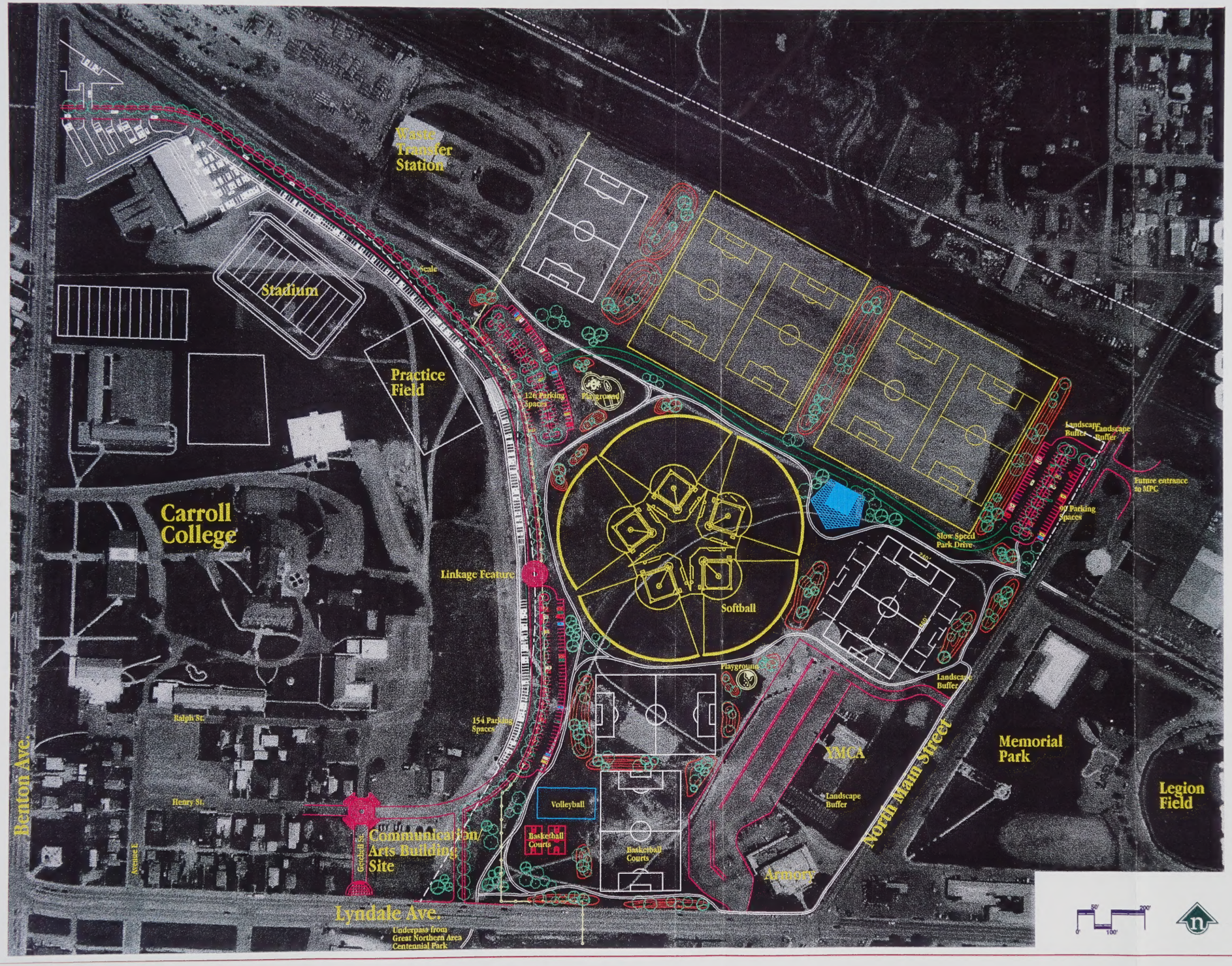
CARL THUESEN
A S L A
GOLF COURSE ARCHITECTURE
LANDSCAPE ARCHITECTURE
1925 GRAND AVE. SUITE 105
P.O. BOX 22043
BILLINGS, MT 59104
406 252-5545 FAX 245-9635

Drawn by: GSG
Date: 3/25/97
Checked by: CAT
Date: 4/24/97
Rev: 5/1/97, 9/15/97
Rev: 3/28/98
CADD File: SHEET FINAL 3/26/98.DGN

SHEET 5 OF 5

County Lo C
Facility & # Helena 90
Closure
Finan Assur
GW Corr Meas
GW Monitoring
GW Reports
Inspections
Other:
Landfarm
Liner
Methane
O & M
Run - On

P Crowley
comments.



This drawing is the property of the Landscape Architect. It has been prepared specifically for this site and is not to be used for any other purposes, location, or Owner without written consent of the Landscape Architect.

Centennial Park Master Plan
Master Plan

CARL THUESEN
A S L A
GOLF COURSE ARCHITECTURE
LANDSCAPE ARCHITECTURE
1925 GRAND AVE. SUITE 105
P.O. BOX 22943
BILLINGS, MT 59104
406/252-8345 FAX 245-9025

Drawn by: GSG
Date: 3/25/97
Checked by: CAT
Date: 4/24/97
Rev: 5/1/97, 9/15/97
Rev: 3/28/98
CADD File: SHEET FINAL 3/26/98.DGN

SHEET 5 OF 5

County Lo C
Facility & # Helena 90
Closure
Finan Assur
GW Corr Meas
GW Monitoring
GW Reports
Inspections
Other:
Landfarm
Liner
Methane
O & M
Run - On

Helena I.P.
Closure Plan

8070

PARKS ADMINISTRATION

City of Helena
316 North Park Avenue
Helena, Montana 59623

HELENA MONT. APR 22 '98 METER 6816543 U.S. POSTAGE 0.32

Mr. Pat Crowley
Solid Waste Division
1520 East Sixth
Helena MT 59620-0901

Helena L.F. Closure.

LEWIS AND CLARK COUNTY PLANNING DEPARTMENT
316 North Park Avenue, P. O. Box 1725
Helena, MT 59624; Phone: 447-8374

MEMORANDUM

DATE: September 16, 1997
FILE: 1521 PrkPlnRv.mem

TO: Consolidated Planning Board
County Park Board
Parks Plan Steering Committee
Other Interested Parties

FROM: Robert Rasmussen, Planning Director RR

SUBJECT: **Revised Schedule for Parks Plan Public Adoption Process**

On the reverse side of this memo is a revised schedule for the public adoption process of the City and County Parks, Recreation, and Open Space Plans. Please revise your calendars accordingly. We will continue to keep you informed of any changes in this schedule. Your participation in this process is greatly appreciated.

County Lewis & Clark
Facility & # Helena 90
Closure
Finan Assur
GW Corr Meas
GW Monitoring
GW Reports
Inspections
Other:
Landfarm
Liner
Methane
O & M
Run - On

2-5

REVISED SCHEDULE (as of 9-15-97)

PARKS PLAN PUBLIC ADOPTION PROCESS

September 17 *	Cooperative Commissions joint worksession @ 4:00 pm @ Jefferson County (Boulder)
September 22	Consultant provides revised document
September 29	Public Open House on County Plan @ 5-9:00 pm @ Rossiter School (Library)
September 30	Planning Board worksession @ 4:00 pm @ Lewis and Clark Library (Large Conference Room)
September 30	Public Open House on City Plan @ 5-9:00 pm @ Lewis and Clark Library (Large Conference Room)
October 8 *	County Parks Board worksession/meeting @ Noon @ Room 309, City-County Building
October ?? *	Augusta worksession (date, time, and place to be announced) @ ???? @ ????
November 4	Planning Board public hearing and advisory action @ 7:30 pm @ Room 330, City-County Building
November 5	County Parks Board final consideration and action @ Noon @ Room 309, City-County Building
November 17	City Commission public hearing and adoption @ 7:00 pm @ Room 330, City-County Building
November 18	County Commission public hearing and adoption @ 9:00 am @ Room 330, City-County Building

* denotes meeting where Draggoo and Associates may not be present

File: 1520 PrkPln.sch

INITIALS [illegible] DATE 12-5-97

SOLID WASTE OUTGOING CORRESPONDENCE ROUTE SLIP (ONLY)

☐ **NEW APPLICATION** — **Initial / Date**
- Rick T. _____
- Pat C. _____
- Nancy (Proof) _____
- Cathy _____
- Jon D. _____

☐ **NEW LICENSE** — **Initial / Date**
- Rick T. _____
- Pat C. _____
- Nancy (Proof) _____
- Carol _____
- Cathy _____
- Jon D. _____

☐ **HEALTH OFFICER CARD** — **Initial / Date**
- Rick T. _____
- Carol _____
- Cathy _____
- _____ _____

☐ **INSPECTIONS** — **Initial / Date**
- Pat C. _____
- Nancy (Proof) _____
- Carol _____
- Jon D. _____

☐ **INTERIM CLOSURES** — **Initial / Date**
- Rick T. _____
- Pat C. _____
- Nancy (Proof) _____
- Carol _____
- Cathy _____
- Jon D. _____

☐ **CLOSURES** — **Initial / Date**
- Rick T. _____
- Pat C. _____
- Nancy (Proof) _____
- Carol _____
- Cathy _____
- Jon D. _____

☐ **CHANGE IN LICENSE FOR FEE STATUS** — **Initial / Date**
- Rick T. _____
- Pat C. _____
- Nancy (Proof) _____
- Cathy _____

☐ **COMPLAINTS** — **Initial / Date**
- Pat C. _____
- Nancy (Proof) _____
- Carol (filing & DBase) _____

☐ **GROUND WATER** — **Initial / Date**
- Nancy (Proof) _____
- Pat C _____

☒ **GENERAL CORRESPONDENCE** — **Initial / Date**
- Pat C. / ~~Rick T.~~ PPC 12/8/97
- Nancy (Proof) NA 12/5/97
- ~~Jon D. (As Needed)~~
- ~~Mark Steger Smith (As Needed)~~ Mailed NA 12/9/97

☐ MISCELLANEOUS

DEPARTMENT OF ENVIRONMENTAL QUALITY

PERMITTING & COMPLIANCE DIVISION
Community Services Bureau
Waste Management Section

MARC RACICOT, GOVERNOR

STATE OF MONTANA

Phone: (406)444-5345
Fax: (406)444-1374

Metcalf Building
1520 E Sixth Ave
PO Box 200901
Helena, MT 59620-0901

December 8, 1997

Mr. Kim Milburn, Director of Public Works
City of Helena
316 N. Park Avenue
Helena, MT 59623

RE: City of Helena Class II Landfill (Lic. #90) - Closure

Dear Mr. Milburn:

I have recently completed a review of the closure file for the subject facility which has been in pending closure status for a number of years. In order to complete the closure process in accordance with the solid waste rules, the following items should be submitted for review and placement in the facility's file.

1. A notation to the deed (or a similar instrument) of the landfill property, that into prepetutity, indicates that the property was formally utilized as a municipal solid waste disposal facility.

2. Also required are the engineering drawings with the locations of each test boring and moisture density tests completed to vary the thickness and permeability of the cap.

Upon the receipt and review of the above requested information and the completion of a thorough final closure inspection, final closure status will be granted to the facility.

If you have any questions or comments, please do not hesitate to contact me.

Sincerely,

Rick Thompson

Rick Thompson
Solid Waste Licensing Program

F:\USR\CB5684\WP\SW\CLOSUR97\HELENA.129
File: City Of Helena Class II Landfill\Lic. #90\Lewis &Clark County. Closure\Post-closure.

7/8/97

Pat:

This is what was sent to DEQ as certification that the cover was in place. It was sent to the legal dept along with info they had requested on financial assurance.

If you would like to discuss it, I ~~ca~~ will be happy to buy you a cup of coffee.

Ted

Old Helena Inf.
Closure –

MEMORANDUM

RECEIVED
JUL 11 1997
MONTANA
DEPT. OF ENVIRONMENTAL QUALITY
COMMUNITY SERVICES BUREAU

MAY 2, 1997

TO: CHUCK HANSON, CITY ENGINEER

FROM: DOUG KREBS, ENGINEERING MANAGER

SUBJECT: CITY OF HELENA FINAL LANDFILL CLOSURE PLAN

Hydrometrics, Inc. submitted the Helena Landfill Closure Plan to the Montana Department of Health and Environmental Sciences in September 1991. Hydrometrics, Inc. designed the Closure Plan to meet all requirements set forth by the State of Montana in the Administrative Rules of Montana, Title 16, Chapter 14-Solid Waste Management, Sub-chapter 5-Refuse Disposal; and Sub-chapter 7-Proposed Groundwater Monitoring Rules for Landfills in Montana.

The engineer designed the final cover for the City of Helena Landfill according to the State of Montana Class II Landfill Closure Requirements and Recommendations (April 3, 1991). Proposed future land use, maintenance and monitoring have all been considered in the final cover design.

Maronick Construction completed the final cover elevations corrections resulting from DEQ's spring of 1994 on site inspection in October 1995. The chronological sequence of the engineering staff involvement is on file in the engineering office.

County Lewis + Clark
Facility & # Helena 90
Closure — Landfarm
Finan Assur — Liner
GW Corr Meas — Methane
GW Monitoring — O & M
GW Reports — Run - On
Inspections
Other:

2-5

City of Helena
316 N. Park Avenue
Helena, Montana 59623

May 5, 1997

M. Steger Smith, Program Counsel
Permitting and Compliance Division
Department of Environmental Quality
Solid Waste Division
State of Montana
P.O. Box 200901
Helena, MT 59620-0901

RE: Financial Assurance for Landfill Closure,
Post Closure Care and Corrective Action

Dear Mark:

The enclosed materials are an amendment to our original April 7, 1997 landfill closure submission per your request of April 11, 1997, and again on April 29, 1997.

The City of Helena, in consultation with our engineers and attorneys , does not believe those additional documents that you requested are legally required. We tender them in the earnest hope and expectation of a mutual spirit of cooperation and good faith. However, please be advised that we preserve our right to challenge this requirement in the future.

Please advise if we can be of further assistance.

Sincerely,

Kim C. Milburn, P.E.
Public Works Director

c Ted Hill, Environmental Engineer

DEPARTMENT OF
ENVIRONMENTAL QUALITY

FAX # (406) 444-1499

STATE OF MONTANA

OFFICE LOCATION: 2209 PHOENIX AVE. HELENA, MONTANA

MAILING ADDRESS: PO BOX 200901 HELENA, MT 59620-0901

TELEPHONE LOG

TO: City of Helena Class II Landfill File - General Correspondence

FROM: James Wilbur JW

DATE: July 20, 1995

SUBJECT: Phone Conversation with City Engineer, Ted Hill.

During a phone conversation today (July 20th) with Ted Hill, I discussed several aspects of the landfill closure and gas monitoring questions for the City facility with him. Ted indicated that a report on a series of borings that were undertaken to demonstrate that no landscape trees at the Helena Transfer Station were planted at a depth to intrude into the required 18 inch barrier layer of the final cover of the landfill disposal areas will be submitted to the Department in the near future. Also he said that the drill was drilling holes near the YMCA building when the drill rig broke down. Therefore the scheduled installation of methane monitoring probes on the northside of the MRL main tracks and landfill were not completed at that time.

Ted has agreed that he would find out and report to me why methane probe H-8 was labelled as abandoned on the January 1995 monitoring report by Hydrometrics. We also discussed the elements of reporting for the final closure work currently being conducted and the final certification of the closure work would bear a Professional Engineer's stamp.

Initial detection June - 1991

Helena -

Methane Violation

Sept 15, 1994

Remedy required by

Nov 14, 1994

Nov 15 - City says no action

Nov 30 - Jan D - Action Required

Dec 13 - FPC letter required action within 14 days.

Jan 10 - City "No again"

MEN OF
ONMENTAL SCIENCES

FAX #(406) 444-1499

MONTANA

MAILING ADDRESS: Cogswell Building
Helena, MT 59620

May 3, 1994 — wells required. — by Dwdo.

Closure Plan

Approval given Oct. 18, 1993

(2) When cap laid down
May 12, 1993 – verified cap at T-station

July 21, 1994 – was in final process of cap construction

(3) Methane monitoring plan approved
Oct. 18, 1993

STATE DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES

DATE :

Helena L.F #90
Closure

DEPARTMENT OF ENVIRONMENTAL QUALITY

Waste Management Division
Solid Waste Management Program
406/444-1430

FAX # (406) 444-1499

STATE OF MONTANA

OFFICE LOCATION: 2209 PHOENIX AVE. HELENA, MONTANA

MAILING ADDRESS: PO BOX 200901 HELENA, MT 59620-0901

MEMORANDUM

TO: James Wilbur

FROM: Lara Dando LmD

DATE: July 17, 1995

SUBJECT: Response to City of Helena's June 22nd Class II Landfill Closure Letter

The following is a response to the City of Helena's June 22, 1995 letter to you. I have address the closure concerns raised in our inspection report and the City's letter.

1) **TREES** - In the City's response, they mentioned that "the trees west of the access road have proven to not be in the landfill cap." Unfortunately, we have no documentation that verifies this statement. A map illustrating the locations of the probes used to prove that the trees were not planted into the infiltration layer and garbage, and all supporting documents must be submitted to the Department for review and approval [ARM 16.14.530(1)(a)]. I do not believe the trees planted just west of the transfer station access road are 18 feet above garbage.

2) **COVER** - What permeability tests were performed this summer on the exposed clay infiltration layer to determine whether or not any frost, desiccation, or ponding damage had been done over the past year or two? Permeability tests must be performed prior to placement of the final six inches of the erosional layer in order to comply with ARM 16.14.530(1)(a)(i).

What is the final use of this site? Before the Department can approve of the City's closure work, a description of what the old landfill will be used for has to be submitted for approval. If a ball field is to be constructed at this site, additional cover material and other requirements might be necessary [ARM 16.14.530(1)(a)(iii)].

3) **CLOSURE DEADLINE** - I have not received notification of closure work completion from the City of Helena. However, on August 1st, I will gladly make myself available to inspect the old landfill to verify the completion of closure work. By the way, when was a July 1995 closure deadline discussed and who in this office approved it [ARM 16.14.530(1)(g)]?

Jim, if you have any further comments or questions, please see me.

f:\usr\cb5405\wp\closure\helena.co\clsrmemo.795

CITY OF HELENA LANDFILL - MEETING - 07/19/94
AGENDA

1. Discuss placement of methane probes on north edge of landfill.
   Access problems with MRL.

2. Discuss water quality for recent Table 2 monitoring.
   Can we scale back parameter list?

3. Discuss installation of new monitoring well as required by regulations.
   Northeast edge of landfill - Sharbono area?

4. Discuss public notification requirements.

5. Discuss assessment of corrective measures as required by regulations.
   a) Begin assessment within 90 days - finish within 60 additional days.
      Include corrective measures already implemented:
      Landfill Closure
      Clay Cap
      Stormdrain Extension

   b) Groundwater Protection Standards - need to be established prior to finalizing corrective measures assessment.

      Tetrachloroethene - 5ppb (MCL) - but downgradient concentrations in some areas may be higher due to other sources.

      Other constituents - background or levels established by toxilogical assessment and approved by MDHES.

   c) Corrective measures goals - water quality better than groundwater protection standards within plume area <u>beyond</u> the monitoring well network (ie. relative point of compliance).

6. Other closure issues:
   a) Clay cover thickness, permeability - is documentation adequate?
   b) Landscaping - is tree planting now in compliance?
   c) Revegetation this fall.

Sgt. Mike Anderson with the

ing rain this evening.

ight: Gordon Thompson and Nicki trek through the snow on ruse Ave. Tuesday afternoon in Helena. IR photo by Jon Ebelt

ligh Court: pouse killer ot entitled half assets

HEL NA (AP) — A person ing a spouse is not automatical- entitled to half of the victim's ets, the Montana Supreme urt has ruled.

The unanimous decision ersed a lower-court order split- the assets of Nina Garland ween her husband and her two ghters. How much her hus- d, Larry Garland, should eive depends on how much he tributed toward amassing the ets over the years, the Supreme urt said.

The justices sent the case back District Judge Dorothy Cart f Helena to find out t info ation.

Garland was convicted of shoot- to death his wife in October 93 at their home near Helena. s. Garland's will left her estate her two daughters.

Garland contested the distribu- n of money from the sale of the use, an automobile and other perty that he claimed he had ght before the couple married 1986.

The judge divided the assets ally between Garland and the daughters.

Mrs. Garland's estate, repre- ted by her brother, appealed the

Beating victim sues state

Swan River Boot Camp employee retaliates for 1995 assault

By PAULA CLAWSON
IR Staff Writer

Donna Weeks, the woman who was brutally beaten by an inmate at Swan River Boot Camp in January, 1995, has sued Department of Corrections (DOC) Director Rick Day and former Director Mickey Gamble for negligence in the supervision of her attacker.

Weeks was beaten and strangled by Rodney Sattler, a convicted murderer in the Swan River administrative building on Jan. 29, 1995.

Weeks, then 47, was an administrative assistant at the boot camp temporarily living on site.

Weeks was in a coma for 25 days following the attack. She suffered significant damage to her larynx and some paralysis in her right arm. She spent several months in a rehabilitation center in Sacramento, Calif, that specializes in treating strangulation victims.

Sattler, who had been serving a 30-year sentence for strangling 25-year-old Diane Stout to death, was transferred to the Lake County Jail following the attack. While there, Sattler beat fellow prisoner Raymond Carl Martinson to death with a metal bar from an exercise

(More SUIT, page 8A)

Landfill gas may heat YMCA

By EVE BYRON
IR Staff Writer

Methane gas emanating from Helena's landfill may be used to heat the nearby YMCA.

It's a novel effort that isn't guaranteed to work, but engineers for Hydrometrics and Gas Control Engineering say it is technically feasible, and Helena City Commission members are ready to give it a try.

"This is fairly progressive and innovative solution that can actually benefit people and resolve a problem," Commissioner Jack Stults said Monday.

The "problem" is methane gas given off by the rotting garbage in the city-owned landfill near Carroll College. Removing the methane hopefully will reduce the pressure inside the landfill; pressure that forces the gas into the nearby YMCA and pushes organic compounds into groundwater underneath the dump, according to landfill officials.

The landfill was closed in 1993, but landfills can generate methane for 20 years or more after they're no longer taking in garbage. Some of the gas has

(More YMCA, page 8A)

CALAIS, France (AP) — It was the Chunnel builders' nightmare — intense flames and deadly fumes choking the 31-mile tunnel used to whisk passengers and freight beneath the English Channel.

Eight people, including a pregnant woman, were overcome by smoke when fire broke out Monday night on a truck being hauled to Britain on a freight train.

It was the first serious accident since the tunnel linking Britain and France opened two years ago. Service was halted and could take three weeks to be fully restored.

None of the injuries were life-threatening. But the fire was a terrifying example of what can happen — despite elaborate safety precautions and frequent security drills — in this man-made engineering wonder beneath the sea.

"Another five or 10 minutes longer, we'd have all been carried out in bags," said truck driver Brian Shilton, one of 34 people evacuated from the tunnel.

'Another five or 10 minutes longer we'd have all been carried out in bags.'

"It just filled up with smoke so quick it was just unbelievable. Everyone was vomiting and choking and we all thought it was going to be the end," he said. "It was like being in a tomb."

The fire broke out at 9:45 p.m. 11 miles into the westbound tunnel — one of three tunnel corridors — and roughly a third of the way through the trip from Coquelles, France, to Folkestone, England.

The heat and smoke from the blaze were so intense that firefighters had to pull back every eight hours to p cause of the fir mined, though ates the tunnel, unlikely.

Most of the their cabs to sp ride in a club c smoke billowe sprawled on th handkerchiefs lives.

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INSIDE:

Three Sections

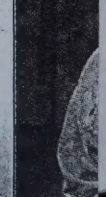
Family: Montana bobcat one of us

WALLA WALLA, Wash. (AP) — Martin Davis doesn't blink when a 20-pound Montana bobcat climbs onto his shoulders and wraps herself around his neck like a fur collar.

At first glance, Bobbi looks like an overgrown

Dauma, an officer with the Department of Fish and Wildlife in Olympia.

Amy Hershberger of Eureka, the breeder who sold Bobbi to the Davises, said she and her husband sell bobcat kittens for $450 each, but that she has seen



troops

But the U.N. refugee agency said Monday that it had verified there were still several hundred thousand more refugees in Zaire, south of Lake Kivu, around Bukavu and Uvira.

Heavily armed Hutu militants were traveling with one large group of refugees, residents north of the Zairian border town of Goma said. The militias were forcing the refugees deep into Zaire's forest, said Dr. Etienne Mahangaiko, director of Kirotshe Hospital near Goma.

But Rwanda insisted Tuesday that all the refugees had returned home, "with the exception of a few stragglers," so the U.N.-approved international force was no longer warranted.

"We want the secretary-general to make a report to the Security Council that the mission is not now necessary," Foreign Minister Anastase Gasana told a news conference before the United States announced it was rescinding its decision to send combat troops.

Rwanda had wanted the intervention force to

Page 1A

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of her waste
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mings. She

can spray like a skunk, chew things up like a dog and tear apart the living room like a teen-ager, Mrs. Davis said.

In Montana, Bobbi roamed free at night on the Davises' four acres of land. Now, she spends her time in a fenced yard, tethered to a clothesline.

"It's for her safety," said Mrs. Davis, who feared Bobbi would be mistaken for a wild animal and shot if allowed to roam free.

Since Bobbi bites and scratches, the family tries to keep her away from strangers.

"Her claws can do a lot of damage," said Mrs. Davis, displaying red marks on her arms.

tar Anderson files for divorce

AP) — "Baywatch" star Pamela Anderson Lee
day from Motley Crue drummer Tommy Lee after
e.
Angeles Superior Court, cited irreconcilable differ-
l, a publicist for the actress.
e each others' names tattooed on their ring fingers,
1995 after a four-day courtship.
nth-old son, Brandon Thomas.
plays lifeguard C.J. Parker on the popular "Bay-
w about the adventures of California lifeguards.
rried to another actress, Heather Locklear.
nth claims that Tommy Lee broke the pelvis of a
er who was trying to videotape the couple outside of
ee also faces a charge of misdemeanor battery.

YMCA

Continued from Page 1A

garbage. Some of the gas has seeped through cracks into the YMCA basement, and the city installed monitors there and at the nearby Armory.

The new plan involves setting up a line of wells between the landfill and the YMCA, with additional wells in the landfill to remove more and richer gas to enable combustion in the existing boiler, according to Ted Hill, the city's environmental engineer. It would be used not only to warm the building, but also to heat the swimming pool and hot water.

The methane system would supplement the existing natural gas heating system, Hill said.

"(This) would meet the need to protect the occupied buildings, remove more gas from the filled area to help reduce groundwater contamination, and make beneficial use of the collected gas rather than wasting the energy in a flare," Hill wrote in a memo to commissioners. "It could also have lower capital and operating costs than conventional treatment by not needing an expensive flare or supplemental natural gas to keep the flare burning."

Just the engineering work on the project is estimated at between $49,000 and $94,000.

On Tuesday, Hill said the wide range encompasses the fact that if the initial engineering work shows the project isn't feasible, the two companies will work out a more conventional system.

Steve Downs, an engineer with Hydrometrics, said this type of system has been used in California, and it's a "pretty proven technology." He's confident this is and will be an effective use of the excess methane.

Hill said he's not sure just yet how much it will cost to install the wells and transmission lines from the landfill to the YMCA, but he hopes that the job can be completed next summer. Hill also is trying to get the job done without interfering with the soccer fields.

But along with doing the technical work, Hill needs to find out if the YMCA is amenable to the idea.

"I don't think they've been approached yet, other than informally," Hill said. "They have to be in full agreement with what we decide to do there. We'll also have to arrange the funding for whatever it costs to hook them up to this."

Other ideas for dealing with the methane included an air filter system, at a potential cost of up to $59,000; or flare-type system, that mixes the methane with oxygen and burns it at a cost of $70,500.

Hill said the YMCA option seems to be the best solution.

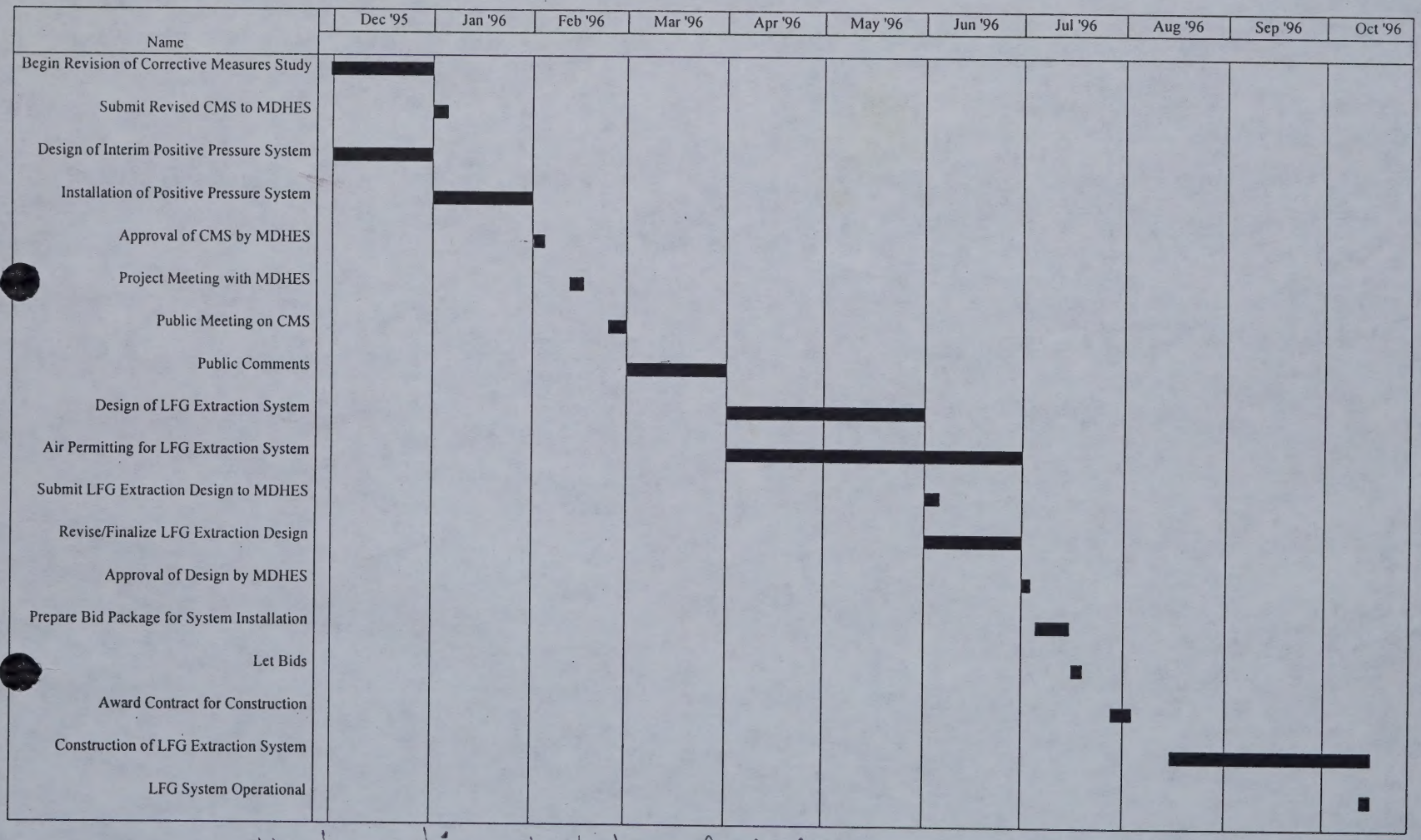
"It would protect the occupied buildings, avoid the problems and cost of a flare, and have more affect on groundwater contamination by removing more gas than the other approaches," Hill said. "It would also make beneficial use of the gas rather than wasting it. It could have lower capital and operating costs."

Court

Continued from Page 1A

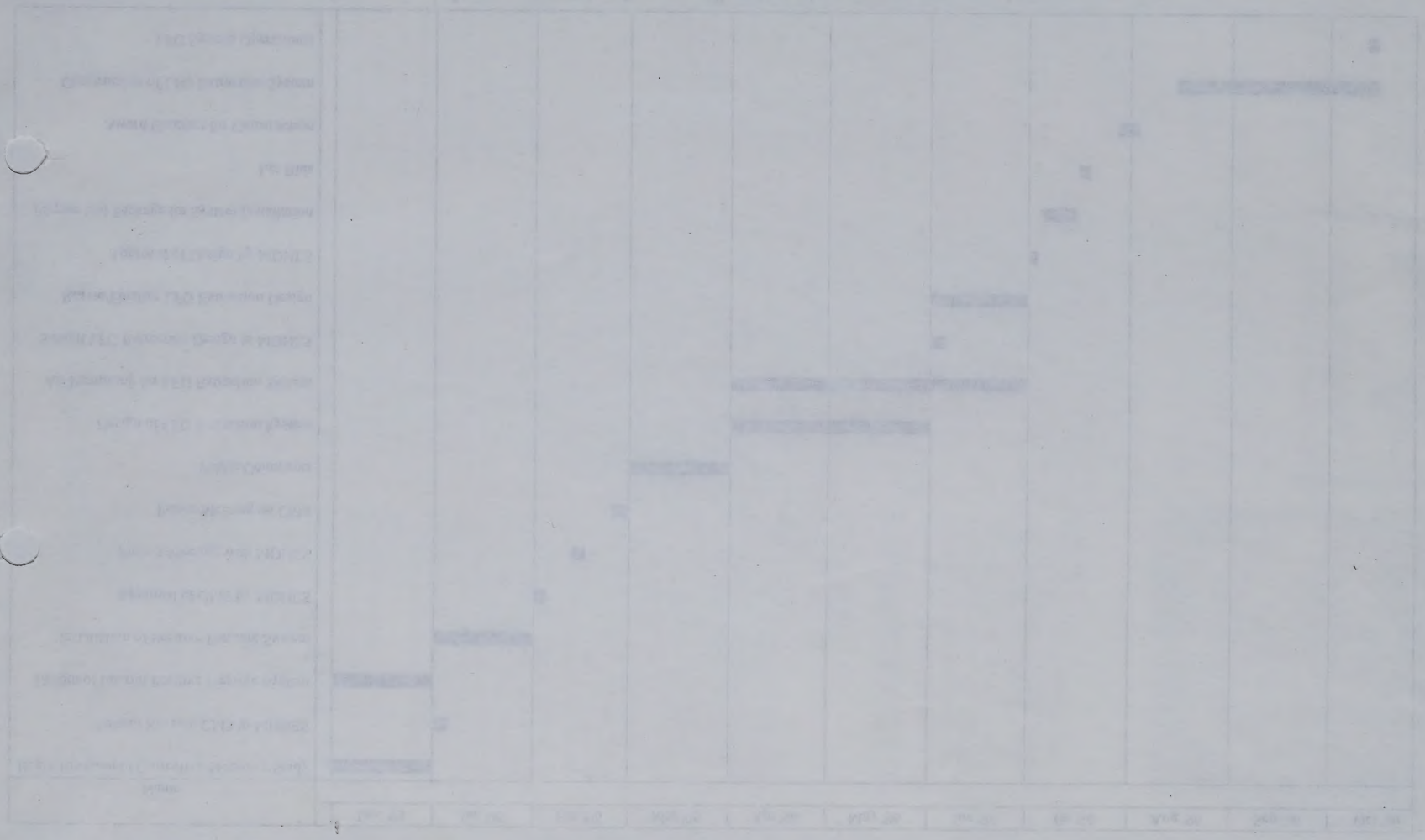
the property should not be divided equally with Garland. How the assets are divided up in this case depends on how much Larry and Nina Garland individually contributed to obtaining and maintaining the property in dispute, the court said.

CITY OF HELENA LANDFILL -- PROPOSED TIME SCHEDULE



Next meeting include AQD (Dave Klemp)

054\034\0107\HEL\951128\h:054\SCHED.MMP



File: Helena L.F
Closure File

Waste Management Division
Solid Waste Program
2209 Phoenix Avenue,
P.O. Box 200901 Helena, MT 59620
Phone (406) 444-1430

MEMORANDUM

TO: **Jim Kujawa, DES**

FROM: **F. P. Crowley**

SUBJECT: **Antenna Pole Project**

DATE: **January 20, 1995**

I would like to make a couple of comments on the Antenna Project of DES.

1) The contractors should be specifically warned that the area is a former landfill.
2) Methane and or hydrogen sulfide gas may be encountered during the excavation of the poles and trench. Monitoring should be done, particularly for methane. (I do have a methane meter.)
3) No smoking should be allowed near open holes.
4) Excavated garbage requires proper disposal, as you propose in your memorandum.
5) Poles should be bedded in clean, non-porous fill, i.e. clay or silt, with positive surface drainage provided around the poles.
6) Sand bedded conduit can serve as a methane collector. Care should be taken to prevent gas collection within the conduit or transmission through penetrations into the building.

Thank you for allowing us to comment on the project.

Water Management Services
Solid Waste Program
2129 Francis Avenue
P.O. Box 20030X Helena, MT 59620
Phone (406) 444-1430

MEMORANDUM

TO: Jim Sylvia, DEQ

FROM: F. T. Crowley

SUBJECT: Antenna Pole Project

DATE: January 20, 1994

I would like to make a couple of comments on the Antenna Project of DEQ.

1) The contractors should be specifically warned that the area is a fenced landfill.
2) Vehicles and or Equipment available can may be accumulated during the excavation of the poles and trench. Monitoring should be done, specifically for methane. It do have a methane meter.
3) No smoking should be allowed near open holes.
4) Excavated garbage requires proper disposal, as you propose in your memorandum.
5) Holes should be backfilled in clean, non-porous fill, i.e. clay or silt, w.th positive surface drainage provided around the poles.
6) Sand bedded conduit can serve as a methane collector. Care should be taken to prevent gas collection within the conduit or transmission through penetrations into the building.

Thank you for allowing us to comment on the project.

MEMORANDUM

TO: Pat Crowley, Waste Management Section, DHES,
cc., record file.

FROM: Jim Kujawa, DES

RE: Installation of Antenna Poles in the old landfill dump next to the State Armory.

DATE: January 9, 1995

Here is a copy of the plot plans for the placement of the seven antenna poles adjacent to the armory building (the poles are the ones numbered 1 through 7 on drawing L1). The depth of embedment will vary with the slope of the land, but will average approximately 10 to 12 feet. I am also including a copy of the construction specifications that will go to the contractors. To save money on this bid, I will be handling all of the on site engineering, and the post engineers will be hauling away all of the excavated material (to the new landfill); and also will be supplying all of the new backfill material.

There will be a second phase to this project, that will take place next June, and will involve excavating a 2 foot deep trench from the base of pole #4 to the DES utility manhole. The post engineers will do the trenching and hauling, while the Army Signal Corps will handle all of the wire installation. A cross section drawing of the conduit system is on drawing L4.

If you have any further questions or concerns regarding this project, contact myself or Homer Young at 444-6911.

MEMORANDUM

TO: Pat Crowley, Waste Management Section, DHES, cc:, record file.

FROM: Jim Kujawa, DES

RE: Installation of Antenna Poles in the old landfill dump next to the State Armory

DATE: January 9, 1995

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If you have any further questions or concerns regarding this project, contact myself or Homer Young at 444-6511.

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01010 - DESCRIPTIVE SUMMARY OF THE WORK.

Identification: The name of this work project is the FEMA National Radio System Antenna Upgrade Project, herein after referred to as the "FNARS Antenna Project." The FNARS Antenna Project is being managed by the Disaster and Emergency Division of the Department of Military Affairs, herein after referred to as the owner. The location of the work is in the Antenna Field adjacent to the National Guard Armory at 1100 North Main Street, Helena, Montana. Bidders may pre-inspect the work site at any time prior to the bid closing date.

Contract Documents: Requirements of the work are contained in the contract documents, and may include cross-references to published information, which is not necessarily contained within this document. The contractor is required to work with the DES staff engineer and technician on site to insure proper placement of the antenna poles. Special Note: unless otherwise noted, all materials for the completion of the FNARS Antenna Project will be supplied by the owner, with the exception of tools. The (incomplete) description of the work on this project is as follows:

The work includes excavation of seven (7) trenches at pre-located sites, to the level of the elevation specified on the construction plans. The proper disposal of all excavated materials will be the responsibility of the owner, in accordance with current city-county solid waste disposal regulations.

The work includes the placement of the seven (7) antenna poles, assuring that the "level datum line" as shown on the construction plans, is maintained.

The work includes the careful replacement and compaction of suitable fill material, supplied by the owner, about the base of the antenna poles, to provide ample support for the pole and riggings.

SECTION - 01050 FIELD ENGINEERING

Surveying and Recording: The locations for the placement of the FNARS Antenna Poles has been previously surveyed by the DES Staff Engineer, and hub stakes have been placed in sufficient quantity to provide references during construction. Due to the sensitivity of the FNARS High Frequency Antenna, it is essential that the base of the poles do not deviate from the established location, as they were designed to be in direct line with similar antenna systems located in Denver, Colorado.

The owner will establish levels at or near the project, and maintain dependable markers for the levels of the work. The depth

MEMORANDUM

TO: Pat Crowley, Waste Management Section, DHES,
cc., record file.

FROM: Jim Kujawa, DES

RE: Installation of Antenna Poles in the old landfill dump - next to the State Armory.

DATE: January 9, 1995

Here is a copy of the plot plans for the placement of the seven antenna poles adjacent to the armory building (the poles are the ones numbered 1 through 7 on drawing 1). The depth of embedment will vary with the slope of the land, but will average approximately 10 to 12 feet. I am also including a copy of the construction specifications that will go to the contractors. To save money on this bid, I will be hauling all of the on site engineering, and the poor engineers will be hauling away all of the excavated material (to the new landfill); and also will be supplying all of the new backfill material.

There will be a second phase to this project, that will take place next time, and will involve excavating a 2 foot deep trench from the base of pole #4 to the DES utility manhole. The post engineers will do the trenching and hauling, while the Army Signal Corps will handle all of the wire installation. A cross section drawing of the conduit system is on drawing 4.

If you have any further questions or concerns regarding this project, contact myself or Homer Young at 444-6911.

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01010 - DESCRIPTIVE SUMMARY OF THE WORK.

Identification: The name of this work project is the FEMA National Radio System Antenna Upgrade Project, herein after referred to as the "FNARS Antenna Project." The FNARS Antenna Project is being managed by the Disaster and Emergency Division of the Department of Military Affairs, herein after referred to as the owner. The location of the work is in the Antenna Field adjacent to the National Guard Armory at 1100 North Main Street, Helena, Montana. Bidders may pre-inspect the work site at any time prior to the bid closing date.

Contract Documents: Requirements of the work are contained in the contract documents, and may include cross-references to published information, which is not necessarily contained within this document. The contractor is required to work with the DES staff engineer and technician on site to insure proper placement of the antenna poles. Special Note: unless otherwise noted, all materials for the completion of the FNARS Antenna Project will be supplied by the owner, with the exception of tools. The (incomplete) description of the work on this project is as follows:

The work includes excavation of seven (7) trenches at pre-located sites, to the level of the elevation specified on the construction plans. The proper disposal of all excavated materials will be the responsibility of the owner, in accordance with current city-county solid waste disposal regulations.

The work includes the placement of the seven (7) antenna poles, assuring that the "level datum line" as shown on the construction plans, is maintained.

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The owner will establish levels at or near the project, and maintain dependable markers for the levels of the work. The depth

of each excavation will differ slightly due to the sloping ground at the job site. The depth of excavation for each pole has already been calculated from the topographical survey, and is shown on the construction plan profiles. The owner will pre-mark each pole to insure that the "level datum line" be maintained.

SECTION 01060 - REGULATORY REQUIREMENTS

Permits: the owner will secure any and all permits necessary to complete the work.

City Building Permit: A City Building Permit has been obtained for the project.

SECTION 01500 - TEMPORARY FACILITIES

General Conditions: This section specifies certain minimum temporary facilities to be provided by the contractor, and all costs associated with temporary facilities are the contractor's. Temporary facilities excludes tools, construction machinery, testing, removal of debris, alterations, or similar items.

Temporary Utility Services: There is no electrical power located at the job site. It is the contractor's responsibility to provide some means of power generation to operate his tools and equipment.

Sanitary Facilities/Drinking Water: These facilities are provided within the Armory building.

Security and Protection: The contractor will provide facilities and services as necessary to effectively protect project from losses and persons from injury during the course of construction, to include: fire protection (type ABC fire extinguisher in the construction area); provide barricades at hazardous locations (excavations left open over-night, etc.), complete with signs, warning lights, or similar devices where appropriate or required by regulation.

SECTION 01700 - PROJECT CLOSEOUT

General Conditions: The provisions of this section apply primarily to the closeout of the work, not to administrative matters such as final payments.

Upon receipt of the contractor's notice that the work has been completed, the DES engineer and FEMA/DES technicians will inspect the work. Upon completion of inspection, the engineer and technician will either recommend final acceptance and final payment, or advise the contractor of work not completed or obligations not fulfilled as required for final acceptance. If necessary, the procedure will be repeated.

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Final Cleaning: At closeout time, the contractor will clean or reclean the work site, remove temporary facilities and barricades, and perform similar cleanup operations as deemed necessary by the owner.

DIVISION 2 - SITEWORK

SECTION 02220 - EXCAVATING, BACKFILLING AND COMPACTING

It is the Contractor's Responsibility to pre-identify and mark all existing underground utility lines and conduits prior to beginning excavation. The contractor will replace, at his own expense, any utilities damaged during excavation, to the satisfaction of the owner of the utility.

The Contractor will excavate a slit trench opening at the site of each pole location, to the depth indicated on the construction plans. All material removed from these trenches will be disposed of by the owner in accordance with the latest city-county health department solid waste disposal regulations. The bottom of the excavation will be compacted, and filled if necessary, to bring the base elevation to the proper level.

The Contractor will place the poles in the trenches by whatever means deemed necessary and safe. The poles must remain supported and vertically and horizontally level, until the excavation is completely backfilled and compacted. It is the Owner's responsibility to insure that the poles are facing in the proper direction, and that the poles are placed at the proper locations previously surveyed by the DES Staff Engineer.

Backfill Material: will be provided by the owner.

Fill Material shall be placed around the edges of the pole and within the trench in layers of no less than six (6) inches and no more than eight (8) inches, and compacted mechanically to a density of 95 percent of the dry density of the fill. Water sprinkling is not allowed due to the site being a closed over landfill.

The Fill Material shall be compacted and brought to an elevation six (6) inches minimum above the elevation of the surrounding terrain. The fill material is then to be sloped so that water runs away from the excavation. Health department regulations require that no water be allowed to pool near an excavation in a closed over landfill.

Final Cleanup: At closeout time, the contractor will clean or reclean the work site, remove temporary facilities and barricades, and perform similar cleanup operations as deemed necessary by the owner.

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The contractor will excavate a silt trench opening at the site of each pole location, to the depth indicated on the construction plans. All material removed from these trenches will be disposed of by the owner in accordance with the latest city-county health department solid waste disposal regulations. The bottom of the excavation will be compacted, and filled if necessary, to bring the base elevation to the proper level.

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Backfill Material: will be provided by the owner.

Fill material shall be placed around the edges of the pole and within the trench in layers of no less than six (6) inches and no more than eight (8) inches, and compacted mechanically to a density of 85 percent of the dry density of the fill. Water sprinkling is not allowed due to the site being a closed over landfill.

The fill material shall be compacted and brought to an elevation six (6) inches minimum above the elevation of the surrounding terrain. The fill material is then to be sloped so that water runs away from the excavation. Health department regulations require that no water be allowed to pool near an excavation in a closed over landfill.

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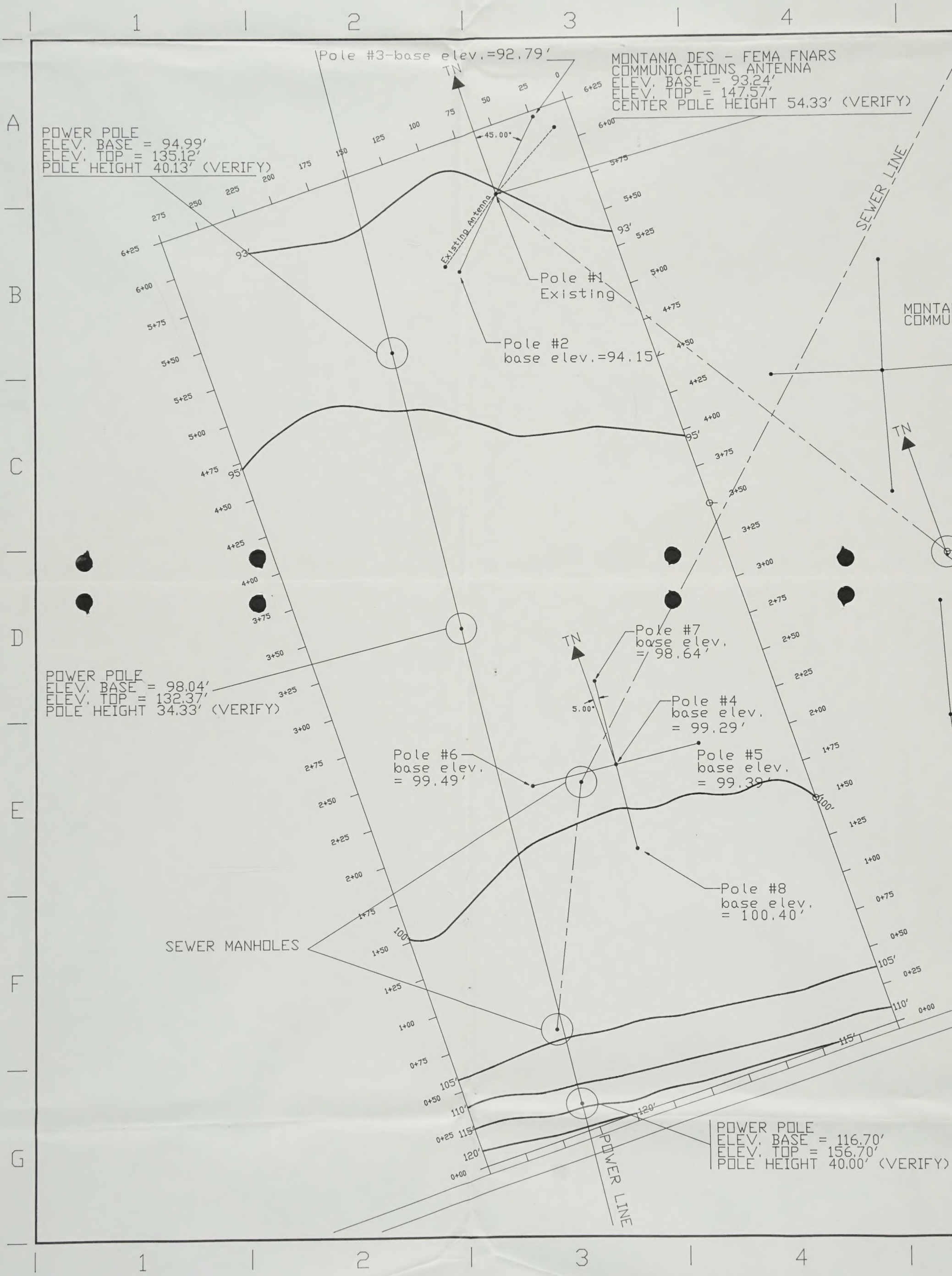
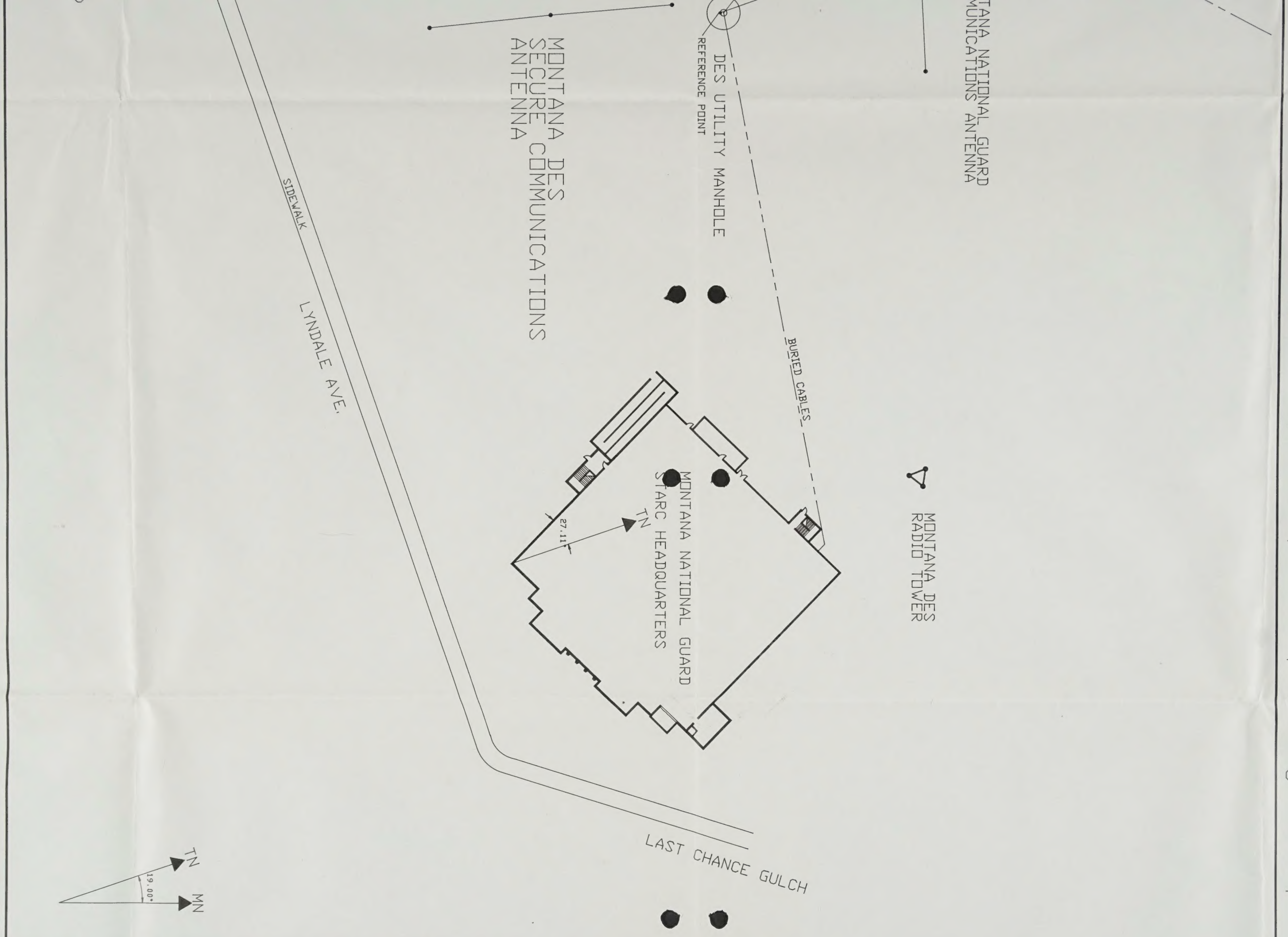
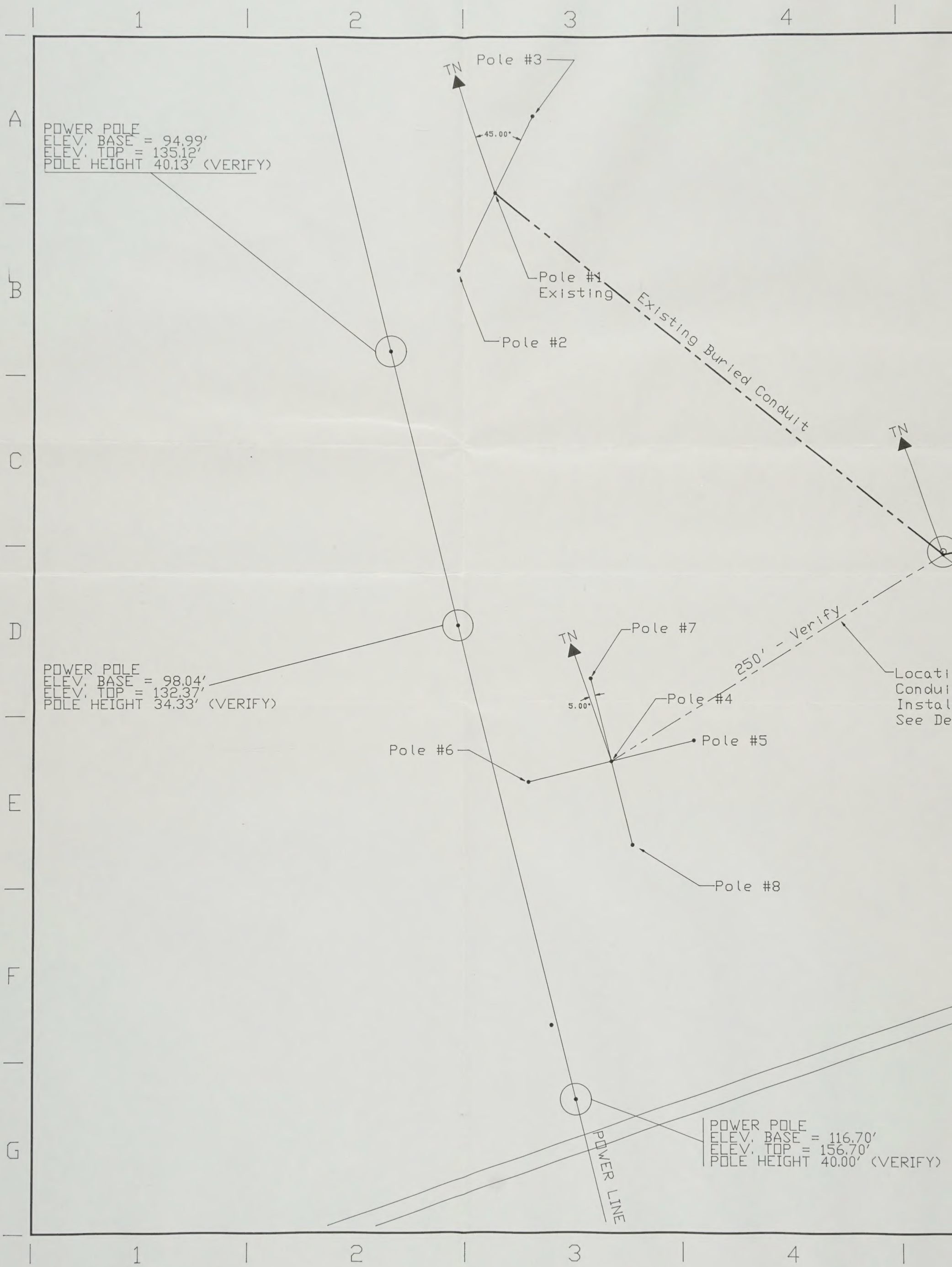

Pole #3-base elev.=92.79'
TN
MONTANA DES - FEMA FNARS
COMMUNICATIONS ANTENNA
ELEV. BASE = 93.24'
ELEV. TOP = 147.57'
CENTER POLE HEIGHT 54.33' (VERIFY)
POWER POLE
ELEV. BASE = 94.99'
ELEV. TOP = 135.12'
POLE HEIGHT 40.13' (VERIFY)
45.00°
Existing Antenna
Pole #1
Existing
Pole #2
base elev.=94.15
SEWER LINE
MONTA
COMMU
TN
POWER POLE
ELEV. BASE = 98.04'
ELEV. TOP = 132.37'
POLE HEIGHT 34.33' (VERIFY)
TN
Pole #7
base elev.
= 98.64'
5.00°
Pole #4
base elev.
= 99.29'
Pole #6
base elev.
= 99.49'
Pole #5
base elev.
= 99.39'
Pole #8
base elev.
= 100.40'
SEWER MANHOLES
POWER LINE
POWER POLE
ELEV. BASE = 116.70'
ELEV. TOP = 156.70'
POLE HEIGHT 40.00' (VERIFY)



UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES ON FRAC. DEC. ANGLES ± ± ±	DRAWN BY: APPROVALS CHECKED BY: RESPON. ENG. ENG.SUPV. PLANT ENG. PROG.	TITLE Plot Plan FNARS ANTENNA UPGRADE PROJECT	DES	DISASTER & EMERGENCY SERVICES DIVISION State of Montana 1100 North Main Street Helena, Montana 59620-2111 (406)- 444 - 6911
MATERIAL: AS NOTED		SIZE D DWG. NO. L1 REV. —		
SURFACE FINISH AS NOTED	AUTOCAD Ver 12	SCALE: 1" = 40' SHEET 1 OF 1		

REV	RELEASE	DESCRIPTION	DFTR	P.ENG
—				

REVISIONS


1
2
3
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A
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C
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F
G
POWER POLE
ELEV. BASE = 94.99'
ELEV. TOP = 135.12'
POLE HEIGHT 40.13' (VERIFY)
TN
Pole #3
45.00°
Pole #1
Existing
Pole #2
Existing Buried Conduit
TN
POWER POLE
ELEV. BASE = 98.04'
ELEV. TOP = 132.37'
POLE HEIGHT 34.33' (VERIFY)
TN
Pole #7
5.00°
Pole #4
Pole #5
Pole #6
Pole #8
250' - Verify
Locati
Condui
Instal
See De
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POWER POLE
ELEV. BASE = 116.70'
ELEV. TOP = 156.70'
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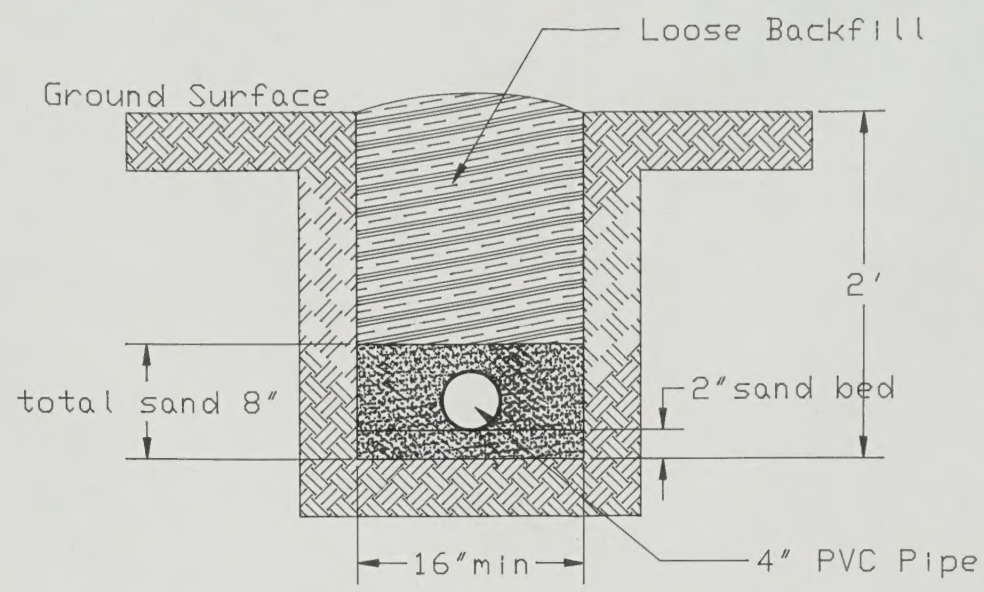
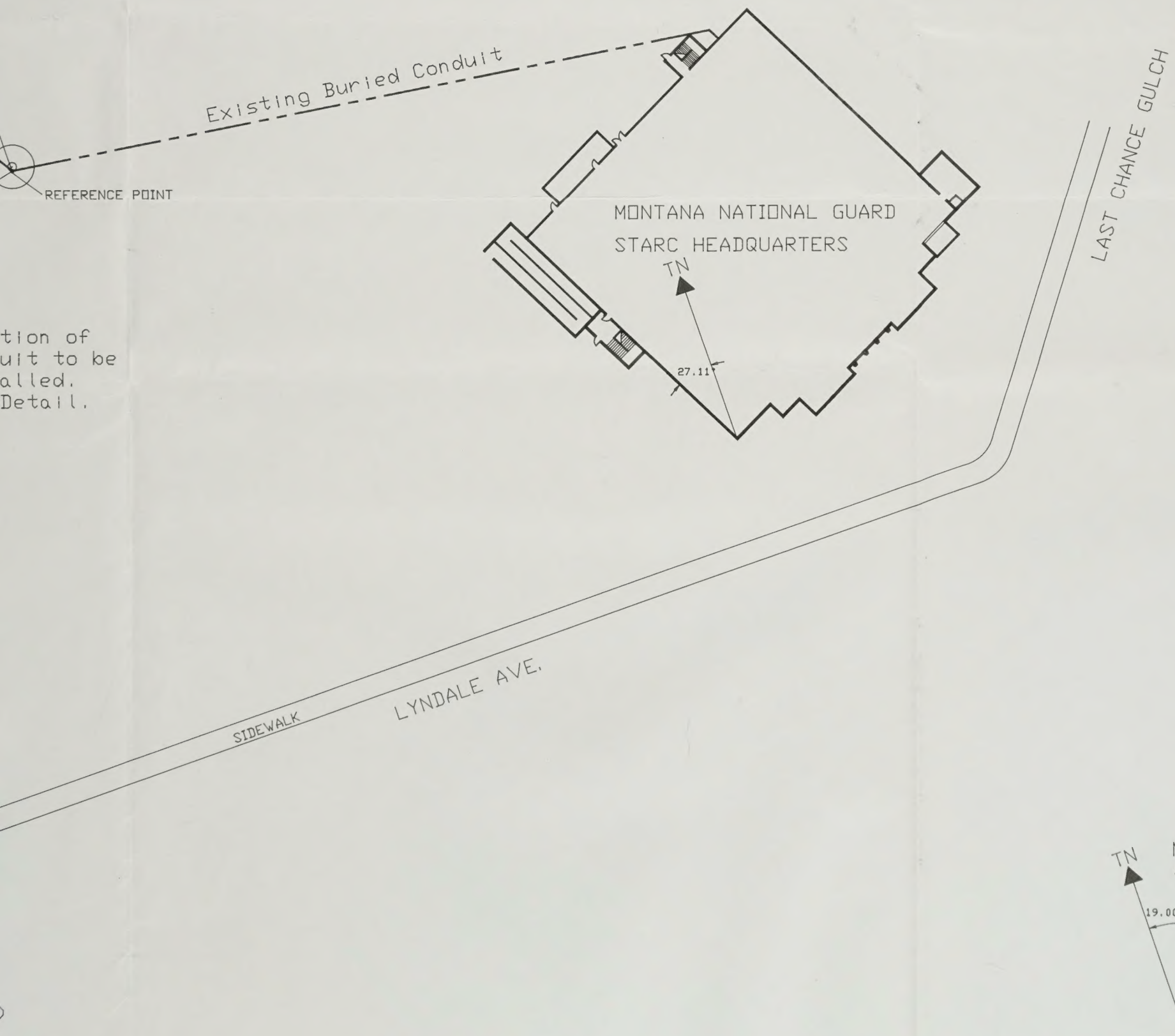


1 L4 Trench Detail
no scale



tion of
uit to be
alled.
Detail.

REV	RELEASE	DESCRIPTION	DFTR	P.ENG
-				

REVISIONS

DISASTER & EMERGENCY SERVICES DIVISION
State of Montana
1100 North Main Street
Helena, Montana 59620-2111
(406)- 444 - 6911

DES

TITLE Conduit Location
FNARS ANTENNA
UPGRADE PROJECT

SIZE D DWG. NO. L4 REV. -

SCALE: 1" = 40' SHEET 1 OF 1

DRAWN BY: APPROVALS
CHECKED BY:
RESPON. ENG.
ENG.SUPV.
PLANT ENG.
PROG.

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES
TOLERANCES ON FRAC. DEC. ANGLES
± ± ±

MATERIAL: AS NOTED

SURFACE FINISH AS NOTED

AUTOCAD Ver 12

Jim W —
Sounds like a possibilty. We should try to make this work.

Has the landfill been closed properly? I'd recommend more top soil.
LD

JD

Rick ✓
P3 ✓
Lana —
Please review + return with feedback
JW

GUARDIAN OF THE GULCH

City of Helena

RECEIVED
NOV 15 1994
Montana Department of Health
and Environmental Sciences
Waste Management Division

November 14, 1994

Mr. Jon Dilliard, Program Manager
Solid & Hazardous Waste Bureau
Department of Health &
Environmental Sciences
Capitol Station
Helena MT 59620

Dear Sirs:

The Helena Softball Association, along with Helena School District No. 1, the Helena Girls Softball Association, and the city of Helena, are contemplating development of the recently-closed landfill area into a complex of softball and soccer fields. We would like to get some idea of what the constraints are for development of those fields and requirements in the area for development, maintenance, and monitoring.

Our overall idea is to develop the area in turfgrass with backstops, dugouts, and gravel driveway and parking area. We would like to construct a surface slab building for a concession building but plan to use chemical toilets for the rest areas.

We know there are some concerns on your part, but the area is very desirable from a location standpoint, and it would be a shame to let all this open space go to waste when there is such a need for organized recreation areas inside the city limits.

We look forward to your reply.

Sincerely,

Jim Pellegrini

Jim Pellegrini, President
Helena Softball Association

c. Kim Milburn, Public Works Director
Chuck Hanson, City Engineer
Randy Lilje, Community Facilities Director
Rich Lynd, Park Superintendent
William J. Verwolf, City Manager

Will irrigation/sprinklers allow water to stand in excess on the surface? Don't drink the wtr!
P.S. Cones have decreased since 3 cover... would be sad to see infiltration ruin this!

316 N. Park, Helena, Montana 59623 Phone: (406) 447-8000

File: City of Helena F.

City of Helena Meeting July 19, 1994

Patrick Crowley	DHES	444-1430
Jim Wilbur	DHES/WMD	" "
Lana M. Dando	" "	" "
PAT POTTS	" "	" "
Steve Downs	HYDROMETRICS	443-4150
Kim MILBURN	PUBLIC WORKS	447-8427
Ted Hill	" "	447-8455

CITY OF HELENA LANDFILL - MEETING - 07/19/94
AGENDA

1. Discuss placement of methane probes on north edge of landfill.
   Access problems with MRL.

2. Discuss water quality for recent Table 2 monitoring.
   Can we scale back parameter list?

3. Discuss installation of new monitoring well as required by regulations.
   Northeast edge of landfill - Sharbono area?

4. Discuss public notification requirements.

5. Discuss assessment of corrective measures as required by regulations.
   a) Begin assessment within 90 days - finish within 60 additional days.
      Include corrective measures already implemented:
      Landfill Closure
      Clay Cap
      Stormdrain Extension

   b) Groundwater Protection Standards - need to be established prior to finalizing corrective measures assessment.

      Tetrachloroethene - 5ppb (MCL) - but downgradient concentrations in some areas may be higher due to other sources.

      Other constituents - background or levels established by toxilogical assessment and approved by MDHES.

   c) Corrective measures goals - water quality better than groundwater protection standards within plume area <u>beyond</u> the monitoring well network (ie. relative point of compliance).

6. Other closure issues:
   a) Clay cover thickness, permeability - is documentation adequate?
   ✓ b) Landscaping - is tree planting now in compliance?
   ✓ c) Revegetation this fall.

July 19, 1994
City-County Building
Room 323

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      Tetrachloroethene - 5ppb (MCL) - but downgradient concentrations in some areas may be higher due to other sources.

      8 or 9 others

      Other constituents - background or levels established by toxilogical assessment and approved by MDHES.

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   b) Landscaping - is tree planting now in compliance?
   c) Revegetation this fall.

Hydrometrics, Inc.
2727 Airport Road • Helena, Montana 59601 • (406) 443-4150 • FAX (406) 443-4155

LJW
JW
P3
Lewis + Clark Co.
City of Helena (II)

July 21, 1994

Mr. Kim Milburn
Public Works Director
City of Helena
316 N Park
Helena, MT 59624

Dear Kim,

This letter summarizes our meeting with Montana Department of Health and Environmental Sciences (MDHES) of July 19, 1994. Attendees at this meeting were; Pat Crowley, Jim Wilbur, Pat Potts, and Lara Dando of MDHES; Ted Hill and yourself from the City of Helena; and myself.

The first items discussed were related to completing final closure of the landfill including:

1. Finishing construction on the clay cover.
2. Landscaping in the transfer station area.
3. Installation of the final methane probes.

The city explained to MDHES that they were in the final stages of cap construction, and that final grading and compaction on the side slopes would be completed this summer. It is also anticipated that seeding will be performed this fall.

It was also noted that the trees east of the transfer station access road have been removed as requested by MDHES. Ted Hill offered to check and make sure that the irrigation system that had been installed in this area had been removed as well. The city will also provide MDHES with information on the trees west of the access road and their relationship to the infiltration layer of the landfill cap.

The installation of the methane probes along the north edge of the landfill, and lack of access along the railroad tracks was also discussed. MDHES personnel indicated that they may be willing to discuss placement of permanent probes north of the railroad tracks, but that some type of monitoring (temporary drive point) would be required south of the tracks as well. Ted Hill and I will evaluate the placement of the probes and determine if access can be provided from the landfill itself and not from the ditch along the railroad tracks.

Hydrometrics, Inc.

July 21, 1994

Ms. Kim Adams
Public Works Director
City of Helena
316 Fifth
Helena MT 59601

Dear Kim,

The Helena Sanitarium was meeting with Montana Department of Health and Environmental Sciences (MDHES) on July 19, 1994. Attendees at the meeting were Pat Crowley, Jim Willis, Pat Poris, and Lisa Dawson of MDHES, Ted Hill and yourself from the City of Helena, and myself.

The five items discussed were related to completing final closure of the landfill including:

1. Finishing construction on the clay cover.
2. Landscaping in the transfer station area.
3. Installation of the final monitoring probes.

The city explained to MDHES that they were in the final stages of cap construction, and that final grading and compaction on the side slopes would be completed this summer. It is also anticipated that seeding will be performed this fall.

It was also noted that the new area of the landfill and side slopes had been removed as requested by MDHES. Ted Hill advised MDHES that they were supplying the drainage system that had been installed in this area has been removed as well. The city will also provide MDHES with information on the type, size of the access road and their relationship to the fabrication date of the landfill cap.

The installation of the methane probes along the north edge of the landfill, and lack of access along the collection tracks was also discussed. MDHES expressed indecision that they may be willing to discuss placement of permanent probes north of the existing tracks, but that some type of monitoring (temporary drive point) would be required south of the tracks as well. Ted Hill and I will evaluate the placement of the probes and determine if access can be provided from the landfill itself and not from the tracks along the natural drainage.

The rest of the meeting focused on the groundwater situation downgradient from the landfill. Based on our discussions, the following actions will be required:

1. Installation of a new monitoring well near the northeast edge of the landfill. Ted Hill and I will determine the proper location for the well and Ted will obtain access for drilling on private property.

2. Some type of notification of property owner who own property above the groundwater "plume" will be necessary . Pat Crowley will discuss the definition of "plume" with the MDHES legal staff to determine what landowners will receive notification.

3. An assessment of corrective measures will be necessary and will be due in November. I will discuss this with you and Ted in our meeting Friday afternoon.

4. Groundwater Protection Standards (GWPS) will need to be established for each of the constituents which have been identified in the groundwater north of the landfill. These GWPS will provide a basis for establishing cleanup goals for the corrective measures study. GWPS' will be established based on federal maximum contaminant limits (MCL's), guidelines established by MDHES' Water Quality Bureau, and/or toxicological assessment of the individual constituents.

5. An alternative parameter list for Table 2 assessment monitoring should be proposed to MDHES, so that monitoring expenses may be reduced to a reasonable level.

We will further discuss these issues in our meeting on Friday. Please call if you have any questions.

Sincerely,

Steven K. Downs, P.E.
Engineering and Environmental
Service Manager

c: Mr. Ted Hill - City of Helena
Ms. Lara Dando - MDHES

The rest of the meeting focused on the groundwater situation downgradient from the landfill. Based on our discussions, the following actions will be required:

1. Installation of a new monitoring well near the northeast edge of the landfill. Ted Hill and I will determine the proper location for the well and Ted will obtain access for drilling on private property.

2. Some type of notification of property owners in our new monitoring above the groundwater "plume" will be necessary. Pat Crow-Ley will discuss the definition of "plume" with the MDHES legal staff to determine what landowners will receive notification.

3. An assessment of remedial measures will be necessary and will be due in November. I will discuss this with you and Ted in our meeting Friday afternoon.

4. Groundwater Protection Standards (GWPS) will need to be established for each of the constituents which have been identified in the groundwater north of the landfill. These GWPS will provide a basis for establishing cleanup goals for the corrective measures study. GWPS will be established based on federal drinking water standards, MDEQ's guidelines established by MDHES, Water Quality Bureau, and/or toxicological assessment of the individual constituents.

5. An alternative procedure for the Table 2 assessment monitoring should be proposed to MDHES, so that monitoring expenses may be reduced to a reasonable level.

We will discuss these issues in our meeting on Friday. Please call if you have any questions.

Sincerely,

Steven K. Dawes, P.E.
Engineering and Environmental
Service Manager

c: Mr. Ted Hill - City of Helena
Ms. Lara Dunda - MDHES

CITY OF HELENA LANDFILL - MEETING

TUESDAY MARCH 15, 1994

TIME: 10:00 AM- 12:00 PM

AGENDA

1. Item by item review of MDHES letter dated 02/25/94.

2. Discuss up-date to Sampling and Analysis Plan.

3. Discuss installation of new monitoring wells. Decide on locations.

4. Schedule spring/assessment monitoring, and monitoring suggested by MDHES. WQ district involved.

5. Discuss preparation of corrective measures plan. (schedule, corrective measures already implemented ie.. closure, storm drain).

DEPARTMENT OF
HEALTH AND ENVIRONMENTAL SCIENCES
Solid and Hazardous Waste Bureau
Solid Waste Program
MARC RACICOT, GOVERNOR 406/444-1430
FAX # (406) 444-1499
STATE OF MONTANA
OFFICE LOCATION 836 Front Street Helena, Montana
MAILING ADDRESS: Cogswell Building Helena, MT 59620

March 14, 1994

Robert T. Hill, Environmental Engineer
City of Helena
316 North Park
Helena, MT 59623

Dear Mr. Hill:

The changes proposed in your letter of February 2, 1994, to the storm drain design as part of the closure plan for the City of Helena landfill are approved.

If you have any further questions on this matter, please contact Lara Dando of our staff.

Sincerely,

F. Patrick Crowley
Solid Waste Regulatory Lead

File:helena landfill\closure plan
Path:H:\cb5403\wp\landfill\closure\Hlnstorm.311

City of Helena

RECEIVED
FEB 07 1994
MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES

February 2, 1994

Lara M. Dando
DHES, Solid & Hazardous Waste Bureau
P.O. Box 200901
Helena, MT 59620-0901

Dear Ms. Dando:

The closure plan for the City of Helena Landfill includes extending the storm drain farther to the north. Our original plan, as submitted to you, was to simply line the ditch with fabric and place 18" of rip rap on top.

We would like to slightly change the design to make absolutely sure that all storm water is carried as far as intended. The change is simply to install a 15" diameter pipe in the rip rap layer. Hydrometrics, Inc. has calculated that the selected pipe capacity will exceed the capacity of the original base flow portion of the ditch (attached). We will cast in place a connection from the existing sewer discharge to the 15" pipe. Flow exceeding the capacity of the pipe will simply flow down the original base flow portion of the ditch.

We intend to proceed with the pipe installation as soon as we receive your approval. We would like to have it in place before the spring thaw and high run off.

Your early approval would be appreciated.

Sincerely,

Robert T. Hill
Environmental Engineer

RTH:ldw
sani\change.cls

316 N. Park, Helena, Montana 59623 Phone: (406) 447-8000

Hydrometrics, Inc.
2727 Airport Road • Helena, Montana 59601 • (406) 443-4150 • FAX (406) 443-4155

January 28, 1994

Mr. Ted Hill
Environmental Engineer
City of Helena
City/County Building
316 North Park
Helena, MT 59623

Dear Ted,

Enclosed is a final copy of the **Helena Landfill Annual Report on Groundwater Monitoring** for submittal to the Montana Department of Health and Environmental Sciences.

Also enclosed is a hydraulic calculation for a 15-inch pipe for the drainage channel. As mentioned in my previous correspondence, one 15-inch pipe will convey the entire capacity of the original base flow portion of the ditch. The calculated capacity of the base flow portion of the ditch was 4.37 cfs, while the 15-inch pipe is capable of conveying 5.46 cfs. In addition, a flow velocity of over 2 feet per second can be maintained at a discharge of 0.2 cfs or greater, so clogging should not be a significant problem. The 18-inch pipe in the original design was suggested on a cost-to-benefit basis, however, just one 15-inch pipe would be adequate, and may be easier to contain in the riprap.

As I mentioned in our discussion earlier this week, we have received the laboratory data for the December 1993 monitoring. We have begun a statistical evaluation of the data, as required by the new state regulations, and should have a report completed next week.

Please call any time if you have any questions, or if you would like to discuss this report in person.

Sincerely,

Steven Downs

Steven K. Downs, P.E.
Senior Engineer

u:\sdowns...letters\hill6.skd

Circular Channel Analysis & Design
Solved with Manning's Equation

Open Channel - Uniform flow

Worksheet Name: DRAIN

Comment: Helena Landfill - Drainage Channel

Solve For Full Flow Capacity

Given Input Data:

Diameter.....	1.25 ft
Slope.....	0.0146 ft/ft
Manning's n.....	0.020
Discharge.....	5.07 cfs

Computed Results:

Full Flow Capacity.....	5.07 cfs
Full Flow Depth.....	1.25 ft
Velocity.....	4.13 fps
Flow Area.....	1.23 sf
Critical Depth....	0.91 ft
Critical Slope....	0.0187 ft/ft
Percent Full.....	100.00 %
Full Capacity.....	5.07 cfs
QMAX @.94D.....	5.46 cfs
Froude Number.....	FULL

Circular Channel Analysis & Design
Solved with Manning's Equation

Open Channel - Uniform flow

Worksheet Name: DRAIN

Comment: Helena Landfill - Drainage Channel

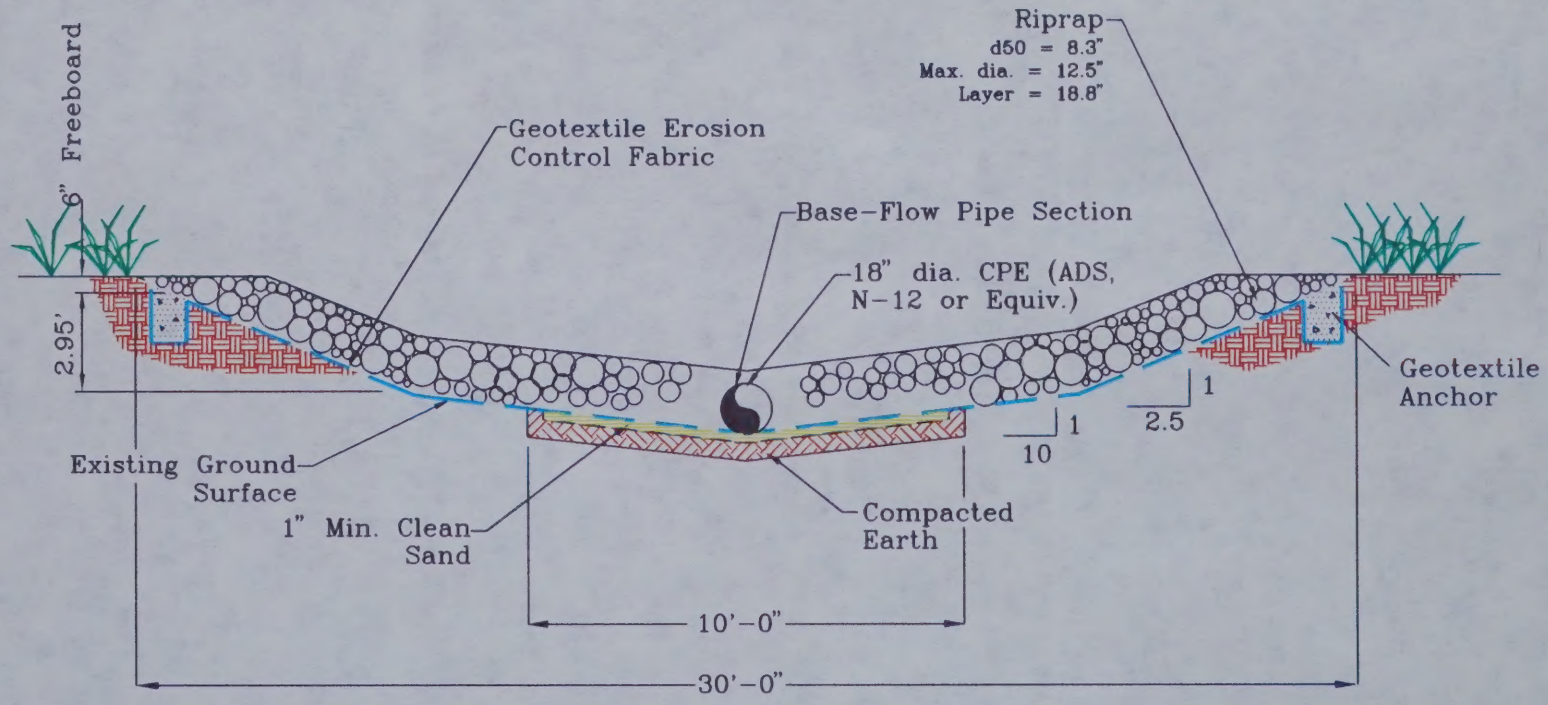
Solve For Actual Depth

Given Input Data:

Diameter.....	1.25 ft
Slope.....	0.0146 ft/ft
Manning's n.....	0.020
Discharge.....	0.20 cfs

Computed Results:

Depth.....	0.17 ft
Velocity.....	2.01 fps
Flow Area.....	0.10 sf
Critical Depth....	0.17 ft
Critical Slope....	0.0135 ft/ft
Percent Full.....	13.56 %
Full Capacity.....	5.07 cfs
QMAX @.94D.....	5.46 cfs
Froude Number.....	1.04 (flow is Supercritical)



Proj. No:	CHHL01
Dwg. No:	05494002
Scale:	NOT TO SCALE
Date:	1/10/94
Rev Date:	

Figure 1.
Storm-Sewer Extension Cross Section

Lewis + Clark

ROUTE SLIP

DEPARTMENT OF HEALTH & ENVIRONMENTAL SCIENCES

TO:

DATE: 2/1/94

1. Jim JW
2. Pat C. PC
3. Carol R. CR

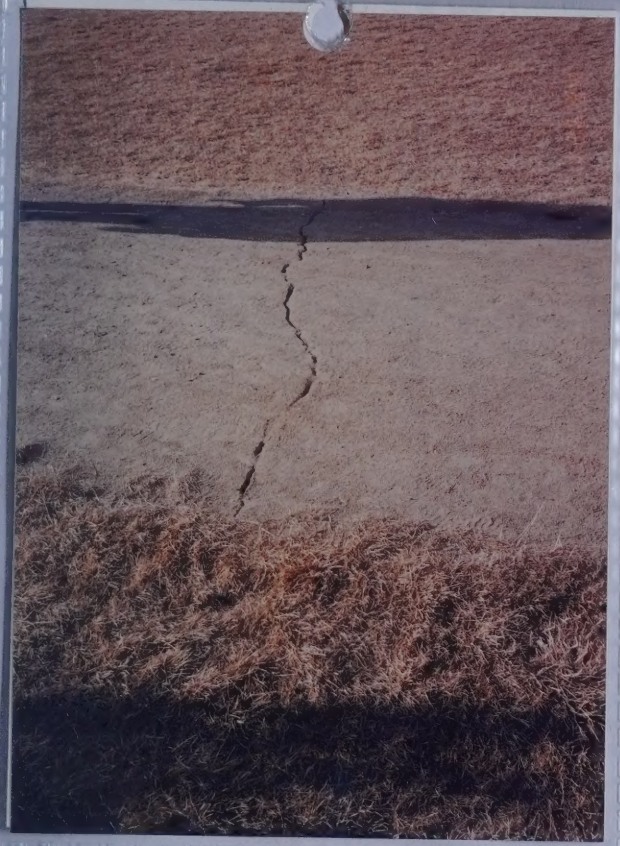
- [ ] Approval
- [ ] Note and Return
- [ ] Prepare reply
- [ ] As requested
- [ ] Comment
- [ ] Note and File
- [ ] Signature
- [x] For your information
- [ ] Necessary Action
- [ ] Investigate
- [ ] See Me
- [ ] Per Conversation

REMARKS:

Please file in Lewis & Clark Co. Helena Class II Landfill Closure file. & make note in Complaint #110 data base.

Thanks!

FROM: Lara D.



Lewis & Clark County
Old City of Helena Class II Landfill/Centennial Park

1/26/94

Page 1


CENTENNI
PARK


CENTENNIAL
PARK
CONCESSION

Lewis & Clark Co.
Old City of Helena Class II Landfill / Centennial Park 11/26/94

1/26/94 Helena, MT
Lewis & Clark County
Old City of Helena Class II Landfill/Centennial Park
"Channel on old landfill with snow patch"
Taken by Lara M. Dando, SWP

1/26/94 Helena, MT
City of Helena Old Class II Landfill/Centennial Park
Lewis & Clark County
"Channel looking SE towards YMCA"
Taken by Lara M. Dando, SWP

Page 4

1/26/94 Helena, MT
Lewis & Clark County
Old City of Helena Class II Landfill/Centennial Park
"Looking at Landfill's final cover & side slope"
Taken by Lara M. Dando, SWP

1 x letter

L&C
Class II l.f.

ROUTE SLIP

DEPARTMENT OF HEALTH & ENVIRONMENTAL SCIENCES

TO: Proof LH

DATE: 1/4/94

1. Jim JW
2. Pat C. PPC & Roger RCS
3. Jon JD

☐ Approval	☐ Comment	☐ Necessary Action
☐ Note and Return	☐ Note and File	☐ Investigate
☐ Prepare reply	☐ Signature	☐ See Me
☐ As requested	☐ For your information	☐ Per Conversation

REMARKS:

Please file one copy in Lewis+Clark Co. Class II Landfill file & one in the Transfer Station file.

Oh, could I get a copy of all the tree information? Thanks! ✓

Sent 1/10/94

FROM: Lara D

(1)

DEPARTMENT OF
HEALTH AND ENVIRONMENTAL SCIENCES
Solid and Hazardous Waste Bureau
Solid Waste Program
MARC RACICOT, GOVERNOR (406) 444-1430
FAX # (406) 444-1499
STATE OF MONTANA
OFFICE LOCATION 836 Front Street Helena, Montana
MAILING ADDRESS: PO BOX 200901 Helena, MT 59620-0901

January 10, 1994

Ted Hill
City-County Building
316 North Park Avenue
Helena, Montana 59623

SUBJECT: Landscaping Activities at the City of Helena Class II Landfill and Transfer Station

Dear Mr. Hill:

I would like to thank Richard Nisbet for his November 23, 1993 letter regarding the landscaping activities at the City of Helena Transfer Station/Class II Landfill. The information submitted was very informative. However, the Montana Department of Health and Environmental Sciences, Solid Waste Program (Department) will not allow the City to plant trees and install a drip irrigation system into the 18 inch infiltration (clay) layer.

Mr. Randy Lilje indicated in his memorandum that "it is very unlikely that the roots would even grow into the clay cap layer." However, it is suspected that some of the trees were planted directly into that clay "infiltration" layer. By planting the trees into a "tight" medium (permeability of at least $1x10^{-5}$ cm/sec), the roots will have problems growing. Also, the roots, being planted within inches of the buried waste could tap into a leachate or methane pocket, killing them (and thus directly opening the infiltration layer). According to the Administrative Rules of Montana 16.14.530(1)(a)(ii), a seed bed layer is required to be placed on top of the infiltration layer. This erosion layer should contain a minimum of six inches of earthen material that is capable of sustaining native plant growth and **protecting the infiltration layer from** frost effects and **rooting damage** (emphasis added). It is also known that the irrigation system was trenched through the 18 inch clay infiltration layer and into garbage. The trees and drip irrigation system should not have been installed without the City first applying the erosion layer onto the closed portion of the landfill.

The Department will not allow any tree to remain as-planted in the 18 inch clay infiltration layer. The City did have approval to plant only shallow-rooted species on the old landfill only as long as an erosion layer that was 3 feet thick in conjunction with the minimum 18 inches of required infiltration layer was installed. The portion of the drip irrigation system installed into the clay

infiltration layer have to be removed as well and placed in the erosion layer. In order to determine which trees and which parts of the drip irrigation system have to be removed, more information will have to be provided. Please submit diagrams illustrating the location of all the trees and the drip irrigation system. Cross sections should also be included to document the waste, the thickness of the clay infiltration layer, and the locations and depths of the trees and the irrigation system. Please draw this diagram to scale.

If the City wants to propose a different soil moisture monitoring plan for the recently closed landfill than the one already approved for the Centennial Park area, more information is required. The proposed plan should include a map indicating the piping and nozzle network, and how much water would be released per irrigation event.

In conclusion, I would like to focus on the closure plan for the City of Helena Class II Landfill. The City is required to submit an updated closure sequence and a final contour map to reflect the changes that occurred last year due to the extended use of the landfill. Please discuss when the final erosion layer will be installed. And second, the Department is still awaiting the methane monitoring probe installation schedule for the landfill. As you may recall, the methane monitoring plan was approved last year. Also, sampling should be occurring quarterly, at minimum.

Thank you for your cooperation in this matter. If you are interested in meeting to discuss the contents of this letter, please do not hesitate to contact me. Please let me know if I can be of any assistance.

Sincerely,

F. Patrick Crowley For

Lara M. Dando
Solid and Hazardous Waste Specialist

cc: Steven Downs, Hydrometrics, Inc., 2727 Airport Road, Helena, MT 59601
Lewis and Clark County Sanitarians' Office, City-County Building, P.O. Box 1723, Helena, MT 59624
Bill Verwolf, Helena City Manager, 316 North Park, Helena, MT 59624
Randy Lilje, Community Facilities Director, 316 North Park, Helena, MT 59624
Barry Damschen, Damschen & Associates, P.O. Box 4817, Helena, MT 59604

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